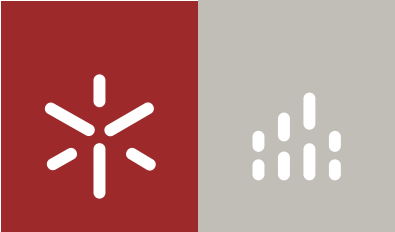


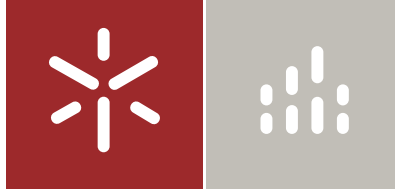


Ghadeer Hummeid

Schools as social magnetics within the refugee camps fabric

Universidade do Minho
Escola de Arquitectura





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Schools as social magnetism within the refugee
camps fabric

Dissertação de Mestrado
Ciclo de Estudos Integrados Conducentes ao
Grau de Mestre em Arquitectura
Área de Cultura Arquitetónica

Trabalho efetuado sob a orientação do
Professor Doutor João Paulo Cabeleira Marques Coelho

Declaração

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Universidade do Minho, 30 de julho de 2020

Assinatura

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Declaração

Statement of Integrity:

I hereby declare having conducted this academic work with integrity. I confirm that I have not used plagiarism or any form of undue use of information or falsification of results along the process leading to its elaboration.

I further declare that I have fully acknowledged the Code of Ethical Conduct of the University of Minho.

Universidade do Minho, 30 de julho de 2020

Assinatura

*To my parents,
to my sisters and brothers,
to my family and friends,
to the Global Platform for Syrian Students,
to Syria, to Portugal,
to the martyrs of Syria, to all those young birds who live in camps,
I hope one day you will be able to spread your wings and fly to peace.*

Home

*"A Memory of Sacred Land
That It Once Was Your Whole World
Was Set Completely in Flames"*

Nikita Gill, 2019

Abstract

On the hinterlands between countries, there are invisible cities, populated by those who are seeking peace and safety, who have been forced to flee their bleeding lands from destruction, persecution, and tragedy, these cities are the refugee camps. During the years of the Syrian conflicts, children are growing on the margin of life between borders and camps, in a state of “permanent temporariness” waiting with their families for the day that they can return home. With the absence of life normalcy and stability, refugees camps lack the educational, social, cultural, common structures due to the poorly camp environments and the increased number of refugees. The young generation of refugees are on the verge of being a lost generation if their deprivation of the rights for education, survival, protection, development, and support continues, for them, education considered a simulation of development, stability and protection, and peace. The research revolves about the problem of the lack of educational and social facilities in refugee camps and it's based on highlighting the impacts of conflict and displacement on refugees education and analysing new particular educational models that were built to provide the young generations of refugees in different camps with access to quality education in order to drive a set of physical components/ criteria for the educational facilities in camps according to those models. Based on the results of the analytical study of the particular cases of study and the research theoretical information, the research adopted the theory of School Climate to measure and determine the efficiency of a school in the context of refugee camps, and to determine its principal physical circumstances in order to draw a set of components that work on turning the camp schools to be an Edu-social space serve for both social and educational purposes by providing young generations with efficient positive educational facilities that promote their cognitive, pedological and psychosocial, physical development, simultaneously serve their communities by turning the school to a social magnetic, recouping the deficiency in the lack of social, common spaces with the intention to encouraging communities local, refugee ecumenical, social, cultural aspects, and enhancing their interrelationships which in turn will strengthens the social cohesion and resilience for the entire society.

Keywords: camps, education, Edu-social, , refugees, classroom.

Resumo

No interior, entre os países, existem cidades invisíveis povoadas por aqueles que buscam paz e segurança, que foram forçados a fugir das suas terras sangrentas da destruição, perseguição e tragédia. Essas cidades são os campos de refugiados. Durante os anos dos conflitos sírios, as crianças crescem na margem da vida, entre fronteiras e campos, num estado “provisório permanente”, esperando com as suas famílias o dia em que poderão voltar para casa. Com a ausência de normalidade e estabilidade na vida, os campos de refugiados carecem de instalações educacionais, sociais e culturais devido aos ambientes fracos do campo e ao aumento do número de refugiados. A geração jovem de refugiados está prestes a ser uma geração perdida se a privação dos direitos à educação, saúde, proteção, desenvolvimento e apoio continuar. Para eles, a educação é uma ferramenta de esperança, desenvolvimento, estabilidade, proteção e paz. Nesse sentido, esta pesquisa gira em torno do problema da falta de instalações educacionais nos campos de refugiados, destacando os impactos dos conflitos e deslocamentos na educação dos refugiados. Novos modelos espaciais educacionais são analisados para direcionar um conjunto de componentes/ critérios físicos para as instalações educacionais nos campos. Com base nos resultados do estudo analítico de casos particulares e no levantamento de um referencial teórico, a pesquisa adotou a teoria do clima escolar para medir e determinar a eficiência de uma escola e suas principais circunstâncias físicas. A partir daí, um conjunto de componentes é evidenciado para transformar as escolas do acampamento em espaços sociais, servindo tanto em termos sociais quanto educacionais, e ser capaz de fornecer às gerações jovens instalações educacionais favoráveis e eficientes que promovam o desenvolvimento das suas habilidades cognitivas, pedológicas e psicossociais e físicas. Esses espaços, simultaneamente, servem as suas comunidades, transformando a escola em Magnéticas sociais, recuperando a deficiência de espaços públicos/ sociais com a intenção de melhorar as inter-relações entre a comunidade de refugiados e o local, o que, por sua vez, fortalece a coesão social e a resiliência de toda a sociedade.

Palavras-chave: acampamentos, educação, Edu-social, refugiados, sala de aula

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PREVIOUS NOTES | **Introduction**

Theme and Context

Object and Objectives

Methodology and Structure

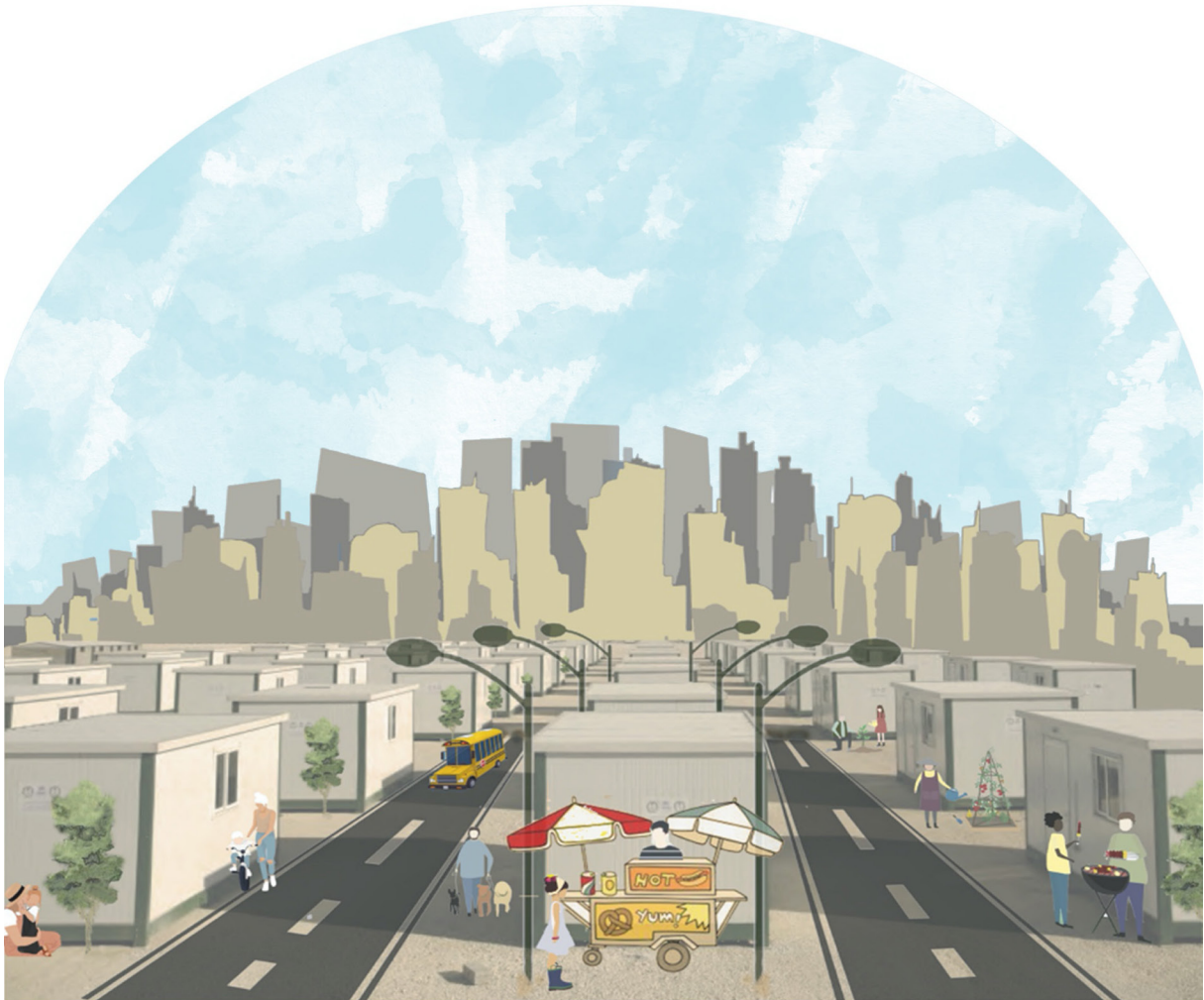


Fig. 1. The hidden city, 'the camp'. Source: G.H

Theme and Context

Wars and conflicts have devastated lives and uprooted millions of people from their homes and everyday lives. The Syrian conflict has produced one of the worst humanitarian crises and the world's most massive refugee crisis. For almost a quarter of a century, according to UNHCR, over 5.6 million Syrian refugees have been displaced to neighbouring countries and beyond, out of a total of 6.6 million Syrian refugees worldwide, and more than 6.2 million people are internally displaced. About 10 percent of Syrian refugees live in camps. The majority are grappling for settle formally in urban areas or have been forced to pay into informal rural regions.

The devastation that this conflict has produced isn't limited to physical destruction. Displacement is a consequence of the conflict and comprises the physical and psychological destruction of individuals and their communities. During the displacement journey, refugees lose their identity, their emotional and psychosocial attachment with their homeland. Thus, their sense of belonging, which compels them to change their physical location, and reorient themselves in the refuge place in addition to suffering from a state of constant psycho-emotional attachment with their past. Camps come as a humanitarian response to secure to those who lost everything with their essential daily needs such as temporary shelters, food, health aid, and emergency, legal reliefs. Yet the reliefs in such a circumstance concentrate on keeping people survived and safe but not alive. Camps portrait the “permanent temporariness” state of refugees that can remain from one month to almost 10 years such in the case of the Syrian conflict.

The refugee camps are typically constructed in the severe stages of the crisis, with the estimation to be temporary using primitive structures (fabric tents, prefab Caravans). These primitive structures provide refugees with their essential services and needs but with a minimum level of services. The continuously increasing numbers of refugees and the timeless crisis turn such structures to be inadequate, which compelled refugees to use the facilities and structures of the host community to recoup the deficiency.

Accordingly, constituting an unprecedented pressure on these services facilities and the host community as well, which in turn create the need to provide refugees with more services and educational, social, cultural, common camps' structures. The inadequacy in the camp structures to serve refugees' needs can negatively impact the development and prospering of both communities as one is growing up within the other. Consequently, the refugees' reliefs should ensure the development and well-being of the refugee, host community at the same time.

Refugee children are often the most neglected during crises. They are at risk of never defeating their cruel circumstances, “Within humanitarian responses, programmatically, children often become

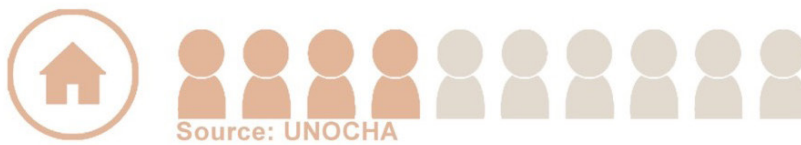
invisible” (Marc Sommers, 2015). The impacts of conflict and displacement on them have a large scale. and they are not limited to being physical but, they expanded to damage the psychosocial and emotional and cognitive development of children (Triple horn and Nicolai, 2003) and moreover conflicts have prevented children from one of the most important pathways to growth and prospering, which is education. According to UNICEF, around half of all Syrian refugees, approximately 2.5 million, are under the age of 18. Over 800,000 children remain out-of-school for months or years, and 1.3 million children are at risk of losing their access to education (UNICEF Middle East and North Africa 2019). In the case of the Syrian conflict, many children and adolescents reached maturity during their life in the camp. They are the vulnerable group of the refugee community, and the chaotic life in camps don’t provide them with a safe, stable, or supportive, vibrant atmosphere, namely schools.

As camps become overpopulated the number of children out of school will increase, they will lose their access to education and will be prevented from being productive members in the development of their nation. Education is one of the most powerful contributors to the social, political, and economic development of a nation, being considered as the backbone in the peace and rebuilding process. “education is the principal instrument in awakening the child to cultural values and thus is the strongest force in the development and growth of a child in preparing him to be a responsible, intelligent, strong and healthy citizen” (Sharma, Moore, and Sonawane 2009, 201)

But why education? Because education has no religion, no gender, no colour, no bigotry, no misogyny, no racism, it is a human journey for all of us. In humanitarian law, it is not about only peace, tolerance, mutual understanding, violence prevention, or conflict resolution. Education is about the moral, humanitarian issues related to social and human experiences, which help in implementing values and rules that support peace. Thus, the regulations that support conflict resolution and the formation of more resilient societies. From Realizing the importance of education, this dissertation will study how the educational facilities within the camp planning can manly provide youth with access to quality education, and how such facilities can foster the building of the social, emotional bonds between refugees and the host community and strengthen the social cohesion and resilience of the entire society and recouping the absence of social, cultural, common structures.

Yet, when providing refugees with a new facility, the first question shouldn't be how we build this structure? But what are the purposes of making it? In the essay *Why/How to Build School Buildings* (1969), the architect Giancarlo De Carlo stated that: “We cannot deal with problems of ‘how to’ [build] without first posing the problems of ‘why.’ If we were to begin discussing immediately the best way to build

school buildings for a contemporary society without first clarifying the reasons for which contemporary society needs school buildings, we would run the risk of taking for granted definitions and judgments which may not make sense anymore. Our speculations would turn out to be sandcastles” (De Carlo, 1969, 12). Consequently, providing refugees with efficient quality educational facilities can't be confused with providing them with a tent or prefab caravans. The spatial circumstances of the camp and their different needs must be analyzed and understood. Consequently, for solving such circumstances, this dissertation use architecture as a tool for Peacebuilding by providing refugees with peaceful and qualified environments as an acknowledgment that Peacebuilding is not only carried out by stopping the conflict, but also by raising and strengthening the generations that will be the future of the country of conflict. In this sense, architecture is understood as the shelter of the catastrophic and one of the main tools used in solving any humanitarian crisis.



Almost 4 in 10 children in Syria have been displaced from their homes.



In one study in a Turkish refugee camp, more than 4 in 10 Syrian children showed symptoms of post-traumatic stress disorder.



5 in 10 children are out of school.



In Lebanon, 8 in 10 Syrian children are not enrolled in school.



Only about 1 in 20 Syrian refugee children have sought asylum in the European Union.



Fig. 2. Statistics Show the Abuses of The Syrian Conflict on Children and Their Education.

Object and Objectives

The main research objective is to understand how refugee camp schools can be social magnets in the human landscape of the camp. To what extent their design and its characteristics can support the educational purposes of refugee children and foster the social, cultural, economic, cognitive aspects of the communities simultaneously.

The research is intended to highlight the need to research and essay new architectural models that provide refugee youth with access to quality education, ensuring the promotion of their mental and physical and psychological health.

As such, throughout the research, the dissertation will illustrate how the educational facility can serve as a protective environment for refugees children securing them with knowledge, the development in the chaotic life of the camps and refuge state moreover recouping their sense of normalcy, community and future to allow them to build their sense of belonging to this new place and country.

By analysing new particular architecture models of camp's schools, according to a specific template drawn particularly for this research, with the aim to will extract the common decisive set of criteria applied in the design of these cases study evidencing particular criteria for the refugees' educational facilities.

Also, this research will adopt the theory of the school climate according to the criteria that will be derived from the cases of the study in order to draw a particular functionally efficient school climate for refugee camps' schools. The theory will be used to measure the functional efficiency of the educational components of the school as a contributor to youth development and the process of integration and inclusion of communities, thus, to measure the performance of the school being an Edu-Social space for the community. The study aim to determine the primary components of the school in a refugee camp to be discerned as social magnets in the camp landscape or in the landscape that binds the refugee camps and host villages, to enhance the interrelationships between communities (hosts, refugees) and strengthen the social coherence and resilience of the entire society.

Methodology and Structure

The research will be divided into three chapters. The first two chapters will follow an analytical approach and will include important information and database according to the research question and theme. The second chapter will follow an analytical approach, which will demonstrate why the study cases were chosen to be analysed and whose results will be used in the third chapter. The third chapter is based on the school climate theory on educational facilities. The theory will apply to the cases of study derived criteria and the primary architectural components that will be defined for the school to be an Edu-social facility within refugee camps in order to understand and measure the school the functional efficiency.



Refugee belongings

Fig. 4. 'Rahel' Exodus. Source: (George Butler 2013)

CHAPTER I | **Education and sense of belonging**

Displacement and sense of belonging to a place

Education and the right to education space

The impact of conflict on young generations education and schools

Education space as protection space

Education facilities as a part of the camp planning

Conclusion



Fig. 5. Home is the spatial compass of refugees. source: Kafr Nabl town, 2020

Displacement and sense of belonging to a place

Commonly, “Home is where the heart is” considering the “ Home “ as a place of emotional security (Richard J. Hamilton et al. 2000), as a shelter that combines emotions, identity, and a sense of belonging. As Human beings, living in a world of chaos, we are in constant pursuit of belonging, of stability. A chase that began from our maturity and lasted for almost all of our lives. Both senses are linked reciprocally and can be explored through the physicality of space. “Home” can be represented as the north direction, a compass, a sanctuary providing safety. During the Syrian humanitarian crisis, thousands of people have been displaced from their homes and homeland, striving for a safe place to settle and obtain their basic needs. Despite how demanding or complicated the process of hosting and adaptation for those refugees by the host community, it will not be more complicated than the journey those refugees had taken to reach the temporary safe shelter even if it is temporary.

Displacement is associated with several different consequences such as the physical alteration of location¹ and Psycho-emotional attachment of the past², in addition to the new social obstacles such as learning a new language, adapting to a new culture, facing the unique situation being a minority, and establishing a new life in the ambiguous present and future (Richard J. Hamilton et al. 2000). Mindy Thompson Fullilove, in *Psychiatric Implications of Displacement* (1996), assumed that the displacement is radically associated with ‘the psychology of place,’ a proposed theoretical model. Considering ‘the psychology of place’ as the fundamental aspect of the displacement and having conceptualized displacement as the loss of physical attachment, the stressor of individuals is identified under the inevitable need of orienting the self in an unfamiliar space. The “Psychology of Place” represents the necessity of the physical locality for psychological health.

This theory implies that individuals endeavor for a sense of belonging to a place through three particular psychological aspects: attachment, familiarity, and identity. Place Attachment is an affectionate bond between a person and spatial space. Familiarity is the process under which the person interacts with its environment and acquires knowledge and intimate awareness. Identity is linked to the sense of self, which is a result of one’s intimate and immediate environment (Mindy Thompson Fullilove 1996). In a much simpler form, these aspects can be explained as follows: we are connected to our home through our family’s affectionate bonds (attachment), through memories produced by the interaction with space

1 **Physical Alteration Of Location** as displacement force refugees to alternate their physical location and put them in the middle of nowhere, forcing them to physically transfer all their life aspects and break their physical bonds with their homeland, which produce the loss and distortion of the sense of the place for them. By G.H

2 **Psycho-Emotional Attachment of The Past** is the refugees’ connectedness to their previous life, as refugees have special emotional and psychological bonds with their past, these bonds are sources of feelings of normalcy, stability, responsibility, belonging of the place, and its community. this attachment with their past is very influential, inextricably as they are yearning constantly for the day that they will be able to back to their homeland, to their normal life to their peaceful past. By G.H

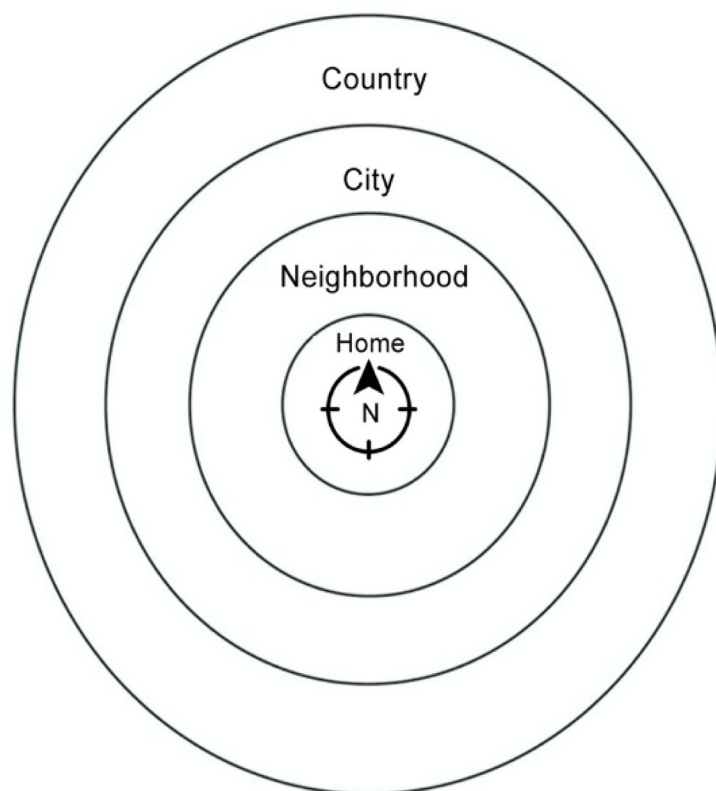


Fig. 6. Series of attachments linked to home as it is the north direction of refugee.

(familiarity), and our roots (identity).

Mindy Thompson Fullilove (1996), linked both Familiarity and Disorientation, Attachment and Nostalgia, Identity and Alienation, assuming that the absence of the first is linked to the presence of the second. Familiarity and Disorientation, displacement produces disorientation, and confusion leaves into a state of paralysis (displaced people suffer from a massive alteration due to the loss of their homes and community). The loss of awareness of the surrounding place, the cognitive map of the space, leaves them in the absence of familiarity. Attachment and Nostalgia, when a person loses the attachment with memorial objects/spaces, his main attachment to its intimate environment 'Place' is lost, being predictable sadness and longing. The loss of home generates a particular emotional state, which is referred to as "nostalgia". The attachment to home sort a sequence series of attachments Fig 5. Starting from the home as the core of this series to the neighborhood, the city, and the country as larger geographic segments. The person's attachment to a place is crucial for psychosocial and emotional health development (Fullilov 1996).

The attachment to a place arises from considering the place as a producer of social interactions (Turton 2005). Thus, this bond can be conceptualized as an attachment to another person, to a social ring, as a sequence of sentiments and behaviors which preserve the connection to the object of attachment, considering it as a source of protection and satisfaction. Understanding how people are related to a place is to understand how inextricably related they are with their social and personal identity. Displacement causes loss of attachment to this referential place; hence, the loss of social attachment, producing a state of "enduring nostalgia," as well as the absence of a sense of safety and identity.

Displacement leads to severe incapacity of being attached to a place, damaging the sense of spatial identity. "We might say that a sense of spatial identity is fundamental to human functioning. It represents a phenomenal or ideational integration of important experiences concerning environmental arrangements and contacts in relation to the individual's conception of his own body in space. It is based on spatial memory, spatial imagery, the spatial framework of current activity, and the implicit spatial components of ideals and aspirations" (Fried 1963).

To the notion of identity, the place is a core factor, therefore being associated with the sense of self. As such, the personal identity depends on having a place within a community, within a society and its symbols. When this identity is destroyed, alienation might result (Fullilov 1996).

Displaced people who experienced loss is not limited to the loss of place, reaching the deprivation of identity. Community displacement is a form of destruction during conflicts. It breaks social and emotional bonds and develops the loss of the Psychology of Place, which in turn produces disorientation, nostalgia, and alienation, and isolation from the new environment, impairing the sense of belonging (Fullilov 1996).

Displacement is radically related to the geographical location, the dismantling of the emotional,

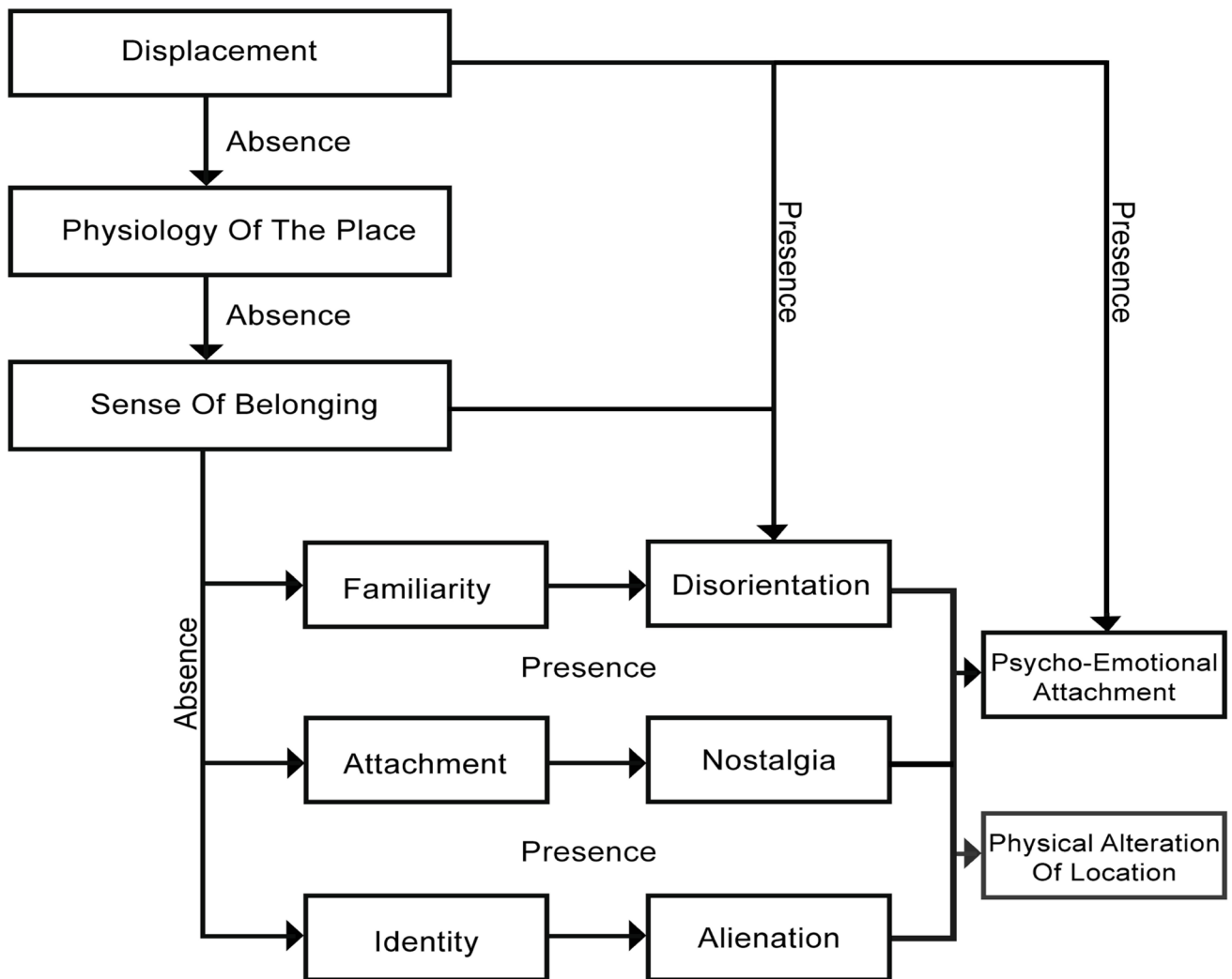


Fig. 7. Displacement consequences on refugees' senses of belonging. source: G.H

spiritual, and physical bonds. People relate to their home geographical location by the interaction with the physical and social structures on the surroundings, such as by going to school, to the park, meeting friends, and the interactions with the neighbors.

Displacement and its distraction which have been produced during the Syrian conflicts and immigration crisis impose pressures and difficulties on individuals to adopt the new environment this can be defined as 'stress'. "Stress denotes stereotyped physiological 'strain' reactions in the organism when it is exposed to various environmental stimuli, changes in, or pressures and demands to adjust to, the environment" (Richard J. Hamilton et al. 2000). Refugees have to manage to recover from the stress associated with the physical and psychological disruption, being able to develop and thrive, to be productive and creative thus, to be provided with the mediums and spatial conditions to be able to have a sense of belonging to this new place imposed on them.



Fig. 8. Refugee children facing the absence of the formal education. Source: ("Lebanon: Stalled Effort to Get Syrian Children in School" 2018)

Education and the right to education space

Education is defined as the process of teaching, training, and learning, especially in schools or colleges, to improve knowledge and develop skills by the Oxford Advanced American Dictionary (“Education Noun” n.d.). Education is the backbone of safe and peaceful communities; it is the foundation stone of nations’ thriving and development. “The impact of education is far-reaching. It opens pathways for children, brings opportunities to communities, and catalyzes widespread development. Education has the power to lift individuals out of poverty. Education can bring permanent and powerful change.”United world school³ 2009.

The impact of education determines all aspects of daily life and catalyzes people to develop and have a better quality of life. In marginalized groups and vulnerable communities, the impact of neglecting education can lead to severe humanitarian defaults. When talking about education in such a harmed community, we are talking about the restoration of Individuals and all generations, thus, the rebuilding of communities and nations. As a human, one needs to improve his skills through interaction with others.

Education is a fundamental human right, enshrined in the 1989 UN Convention on the Rights of the Child and the 1951 UN Refugee Convention. According to the UNHCR⁴, UNESCO⁵ Institute for Statistics 2017-2018 database, 3.7 million refugee children are out of school. “In a world of conflict and upheaval, we as an international community are missing out on one of the best investments, which is the education of young refugees. This is not an expense but a golden opportunity,” said Filippo Grandi (2019), UN High Commissioner for Refugees.

Education is critical for refugees, especially to young generations, as it is considered the key solution to discover and foster life and the ideal way to find answers to natural curiosity. For refugees who have lost and left everything behind, and need to restart, education can be considered as a departing point.

Education transforms life and benefits communities, as it improves young generations lives, promotes their creativity, energy, and ambitions, by developing their self-esteem, their critical abilities for decision-making and raising their voices to enable their effective role in building their community which will allow rapid generational change, community growth and helps to build future country leaders. It is the most assured way to recover the sense of dignity and hope after trauma. It can be the road to an

3 **United world school** is a United Kingdom registered educational charity independent of any political, faith, or cultural missions was founded on May 12, 2009, working on builds and develops community schools for out-of-school children in South East Asia. According to the organisation site, www.unitedworldschools.org.

4 **The United Nations High Commissioner for Refugees (UNHCR)** is a United Nations agency was founded in 1945, with the mandate to protect refugees, forcibly displaced communities and stateless people, and assist in their voluntary repatriation, local integration or resettlement to a third country. According to the UNHCR official site, <https://www.unhcr.org>.

5 **The United Nations Educational, Scientific and Cultural Organization (UNESCO)** is a specialized agency of the United Nations was founded in 1950, aimed at contributing “to the building of peace, the eradication of poverty, sustainable development and intercultural dialogue through education, the sciences, culture, communication and information. According to the UNESCO official site, <https://en.unesco.org/>.



Fig. 9. "We used to joke and say, oh Lord, pull down the school, and now it was pulled down.", 2015, Daria, Syria. Source: ANA press.

independent life, providing capacities to work and achieve economic self-sufficiency, putting an end to the dependence on NGOs, government support, or charity relief (United Nations High Commissioner for Refugees 2019).

But, Why education?

Because education will be prepared refugee generations for the world of tomorrow, to be able to contribute to a more resilient, sustainable, and peaceful community, thus, building the peaceful world of tomorrow. Unfortunately, millions of refugee children and youth are missing out on one of the fundamental human rights: the right to quality education.

Due to the armed Syrian conflict, over 800,000 Syrian refugee children are missing one of their fundamental rights: the right to quality education (UNICEF Middle East and North Africa 2019). This is due to several reasons, including including, the access to the vital basic resources, acquiring new identity documents (birth certificates, educational records, and exam certificates), and the lack of educational facilities in countries of asylum, camps, and frontier areas (United Nations High Commissioner for Refugees 2019).



Fig. 10. A drawing by a Kosovar child in Albania clarify the effect of conflict on children. Source: (Nicolai and Triplehorn 2003).

The impact of conflict on the education of the young refugee generations

Children in the refugee population would find themselves at the margins of life due to the absence of hope of a better future. Education provides those children with protection means that will help them to recoup the sense of future and prevent them from being the targets of the radicalization and vulnerability during the displacement and conflict (Richard J. Hamilton et al. 2000).

Refugee children would grow up in the camp with a sort of subconscious for the existence of other urban components rather than tents and shelters such as public squares, parks, libraries, museums. This emphasize the need of changing the life rhythm inside the camp, even if the change is slight, people successes in adapting the new place and its circumstances depend on several factors: pre-migration experiences and personal resources (what refugees bring to the situation), social networks and contextual/cultural elements and possible continuous stressors(Richard J. Hamilton et al. 2000).

Displaced children, in particular, are denied a healthy life and have severely limited prospects for the future. “children who have experienced conflict are resilient, but they shouldn’t be expected to pick up a pencil and learn as if nothing has happened to them(Wali 2019). One in ten children globally is affected by armed conflict, according to UNICEF. The impact on children is not just physical but also psychological compromising their cognitive development, such as literacy, numeracy, and critical thinking of the children.

Graça Machel⁶, in her report *The Impact of Armed Conflict On Children* (1996), stated that “Not only are large numbers of children killed and injured, but countless others grow up deprived of their material and emotional needs, including the structures that give meaning to social and cultural life. The entire fabric of their societies, their homes, schools, health systems, and religious institutions are torn to pieces”.

Armed conflict and civil war in Syria produced displacement movements internally and externally. Many people had to leave their homes and everything behind them in search of new safe places that would receive them outside the Syrian borders. Statistics indicate that 5.6 million people have fled Syria since 2011, according to UNHCR, seeking safety in Lebanon, Turkey, Jordan, and beyond. Turkey has registered 3,576,659 Syrian refugees until January 2020, Lebanon hosts 1.5 million Syrian refugees only 914,648 are registered until December 2019, Jordan hosts 755,050 refugees until January 2019, according to the operational portal refugee situations (UNHCR).

The life inside the camps can be severe. The impacts on children are very sensitive in terms of

⁶ **Graça Machel** is a Mozambican politician and humanitarian. She is the widow of both former presidents of Mozambique and South Africa; Mozambican president Samora Machel and South African president Nelson Mandela.

mental health and psychosocial behavior, thus, in terms of their entire future (Jabbar and Zaza 2014). “These ‘neighboring host countries’ are generally characterized by overstretched education systems, fragile political and economic institutions, and challenges to inclusion and membership related to their histories of conflict and division” (Dryden-Peterson et al. 2019).

Historically, in times of war and armed conflict, community and social structures, religious, educational, and health institutions can be disordered or purposefully destroyed. (Morina and Nickerson 2018). Children and adolescents are one of the most aggrieved groups. In *Mental Health Of Refugee And Conflict-Affected Populations: Theory, Research And Clinical Practice* (2018), the authors stated that armed conflicts have direct and indirect impacts on the social, emotional, educational life of the children.

These impacts can influence various levels of the child’s ecosystem, such as the individual, its family, community, and society. In the annual report of “ Save The Children Foundation” 2014, a teacher in Syria was quoted: “Right now you can ask any child about the different types of weapons, and they would be able to name all of them for you; they remember weapons more than lessons.” Consequently, armed conflicts impact is reflected in children’s education, social, psychological, and cognitive development.

The conflict’s impacts on children have long-term effects not just on children, but also contributes to the cycle of poverty, inequality, and damage of the community fabric that creates distrust between community members of different religious or ethnic groups, which would lead later to a social exclusion that affects all countries (Solveig 2015).

In this regard, Inside the camp, much of those life structures don’t exist. Camps provide shelters for those who flee their homes looking for a safe life, yet, a civil, healing environment, a peaceful environment, isn’t often adequate. Such social, cultural, educational facilities would help children to surpass this severe circumstance and grow, develop, and live a healthy life as much as possible inside the camp’s borders.

Architecture can influence individual behavior, having impacts in the psychology of people who inhabit the place, and that is, by understanding the user’s psychology and social needs “thus, modifying the individual’s mood and perception, whether the environment is natural or human-made. Understanding how the environment affects people could enable the design and construction of work, recreation, and living space that can influence people’s behavior.” (Vats 2017). Physical structures influence our social behavior and relations. People tend to create a mutual relationship with the environment, as social life and the space significance are generated mutually. Aside from the sheer size of the camp, camps generally lack the presence of a warm physical environment, to embrace the needs of the refugee’s children and their families.

According to the Universal Declaration of Human Rights' article 25 "Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing, and medical care and necessary social services, and the right to security in the event of lack of livelihood in the circumstances beyond his control."1948.

Consequently, housing and social services should be taken as fundamental needs, in which everyone would access security, nutrition, and health-care services centers, schools, childcare centers, and other social facilities. Unfortunately, most of the camps do not contain all of that.

Concludingly, in camps, children don't have access to the essential structures that lead to a healthy life, jeopardizing their right to develop, to learn, and to play as children should. Education, school, and playground have become a luxury and a dream that can't be reached. Accordingly, educational, social, cultural structures must be considered as basic structures within camps to maintain and promote the development of those marginalized societies.

7 **Universal Declaration of Human Rights Article 25.**

(1) Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control. (2) Motherhood and childhood are entitled to special care and assistance. All children, whether born in or out of wedlock, shall enjoy the same social protection.



Classroom in camp



Camp ground as playground

Fig. 11. Children grow, learn, and play despite the harsh circumstances of camps, between the past and the present, Syrian refugees children in camps Lebanon, Jordan, 2016-2018 and Vietnamese refugees children California, 1975. Source: photomontage by G.H.



The generation of the frontiers.



Home lawn



Conflict



Camp

Fig. 12. In the middle of the chaos of the conflicts and camps, children needs protection and stability. Source: (George Butler 2013).

Education space as protection space

Most of us are lucky enough to grow up in a safe, healthy environment. We wake up in the morning, with the alarm clocks buzzing, and go to sleep with the last blink of it during the night. In our unconscious mind, we are affected by the surrounded environment from the space shaping to the lighting, colors, acoustics, aesthetics, and shades. These architectural components play a significant role in the psychological and social substantially engages in the shaping of our personality (Vats 2017).

Unfortunately, contradictory to us, refugees are waking up with the sound of the chaos of the camp and sleeping with the silence of an obscure tomorrow. Many governmental and non-governmental organizations have worked to create specific and exceptional services, spaces, and standards to support and help refugees' groups of all ages to cope with the challenging circumstances that they are facing every day.

Dalai Lama XIV⁸ said, "Where ignorance is our master, there is no possibility of real peace". The absence of education means the presence of ignorance. The loss of quality education is associated to loss of peace, harming the possibility of a second chance of achieving a healthy peaceful life, also, to the loss of many other rights, which can lead to a possible disaster and delays in the peace process, as well as increasing the gap between the locals and refugee communities.

Education in an emergency context is primarily implemented to save and protect younger generations from ignorance, extremism, and backwardness, creating in a well-being community that endeavors to establish healthy social interrelationship, endeavoring peace, not wars. (Triplehorn and Nicolai 2003).

The absence of education leads to the absence of self-development, knowledge, and professional skills acquisition for refugees, which induce poverty more dependence on NGOs and charitable organizations, governments in order to obtain daily livelihoods. Therefore the state of an emotional detachment from community, impairing the sense of belonging, continuity and the feeling of inability to have an independent life, the autonomy of the individuals, in addition to the lack of a healthy environment that provides knowledge, self-development, and empowerment for the all the members of society.

When a crisis occurs, children and youth are considered particularly vulnerable groups to the adverse effects because of their dependence on adult care (OHCHR 2001). Hence, providing those children and youth with an appropriate educational environment, peaceful places contrasting with the surrounding chaos is a crucial objective. Such spaces are essential to create a particular reference for

⁸ **Dalai Lama XIV** The 14th Dalai Lama religious name is Tenzin Gyatso. Dalai Lamas are important monks of the Gelug school, the newest school of Tibetan Buddhism.



Fig. 13. Even with the bombardment of the school, for a child, it is the secure haven.



Fig. 14. Education providing children with stable, pure environment. Source: edited by G.H, ("Refugee Republic: Jumpstarting a New Existence in an Emerging City. Everyday Life in a Refugee Camp." 2012).



Fig. 15. Education is a simulation of stability. Source: ("In-Depth: One in Six Children Live in a War-Zone: Save the Children" 2018)

them within the paradox of the camp, emphasizing the importance of their existence, fostering their effective role in the rebuild of their future societies and countries.

Inside the international humanitarian community, there are many requests to use education as a tool that enhances the protection of the children “as a service to be supported and delivered, and as an enabling right which assists children in accessing their other rights” (Triplehorn and Nicolai 2003). Access to quality education is vital for both refugees and host communities to provide the necessary protection for children and youth in displacement circumstances during armed conflicts. (New York Declaration for Refugees and Migrants: resolution / adopted by the General Assembly 2016). The Oslo/Hadeland Conference On Child Protection In November 1998, called that “Experience shows that education has a preventive effect on recruitment, abduction and gender-based violence, and thereby serves as important protection too” (Triplehorn and Nicolai 2003).

Children and youth are vulnerable to various threats such as psychosocial crisis, family separation, interruption in education, physical and emotional damage, trafficking, and neglect. According to ACTED⁹ children are considered a particularly vulnerable group according to the following reasons:

- “Children are comparatively less physically/mentally/emotionally capable or resilient than adults.”
- “Children, from birth to adulthood, go through a process of total dependence to independence in which they are exposed to risks.”
- “Children are most at risk of abuse, exploitation, neglect, and violence at the hands of adults due to their vulnerability.”
- “Depending on the stage of childhood development, children have different levels of language, literacy, knowledge, resources, skills, capacity which determine how they can and cannot interact with adults and seek support.”

Education and education environment protect children who don't understand what politics is, or why conflicts are being waged, or why people are fighting. All that they think about is how to play, to learn and to live not to stay alive. Early education provides sense of stability and normalcy for refugee children and their families who are living between the borders of the camps. (psychological protection).

Educational facilities provide children with a social, as much as, a cognitive context. School can be considered the agent of socialization for children since it provides them with social and communication skills during the educational process. For instance, within the classroom learning, comprising the process of the interaction among students and teachers, children learn how to adopt new skills of how

⁹ **ACTED**, formerly 'Agency for Technical Cooperation and Development', is a French humanitarian NGO established in 1993. It is a non-governmental, non-political and non-profit organization committed to support vulnerable populations around the world.

to participate productively in classroom, how to express their individuality and opinions and respect the different opinions. In the playground and in the canteen, children are encouraged build interrelationships (August and Hakuta 1997). (Protection of development and skill).

In schools, which embrace students from different backgrounds, there will be a mismatch between students' social, cultural rules and norms. "students from diverse backgrounds will learn a standardized curriculum that effectively transforms diversity into homogeneity. "Students learn a common knowledge base, a common culture, and a common sense of society's official priorities, and perhaps more importantly, they learn to locate their place within it." (Little et al. 2012).

Accordingly, school is a place that provides students with social instruments and a physical environments that promotes their socializing and interrelationships and inclusion within the society. In turn, they will enhance their sense of community by its components and design. Education provides them a broad spectrum of knowledge and skills, the experience that contributes to the right foundation for good future progress through school and its social aspect. Hence, education brings physical and psychosocial protection and background that can safeguard and sustain lives (Education | War Child n.d.).

As camp provides an environment that helps to protect young refugees, schools protect them on a smaller scale. As such, the school can be thought of as a sanctuary from the disturbances of the displacement life, a peaceful and reliable environment for those children. Providing them with nurturing, a shelter inside the shelter, whereas their parents cope with the hardships of camp life and try to obtain food and daily needs within this new place that was imposed on them.

During stability state, the structural form of the school differs from the home. Still, during instability and asylum state, all shelters in the camp are primarily adopted with the same configuration and materials, school and house have the same structural form in most of the cases with differentiation in the use of the interior space.

Yet, the configurations of the shelters vary from one camp to another. In some cases, shelters that serve for being services facilities such as the religious, educational, and health facilities have different configurations, structures, colors, to be clear and prominent among the other shelters and to facilitate the accessibility of them by the refugees. In the cases where almost all shelters, residential or services, have the same architectural configuration, people adopt special techniques to give schools its distinct. By painting the caravans with different colors or hanging a sign next to the entrance referring that it's school, building the school's shelter in a place where it can have its outdoor space for children breaks playtime, determining the school plots by fence or stones to provide schools with sanctity and independency that protect it and student from being harm.

In many camps, the form of tents and caravans change due to the adaptation and overuse.

However, the school remains with its clean, pure, distinct configuration. School is the place where refugees ensure their children are safe. They consider it is the common area for their children to learn, to grow, to play, to gather safely, which encourages refugees to preserve, maintain, and not to abuse the school and respect it as if it's a holy sanctity place.

Places of worship in different religions are sanctity and consider an essential component of refugee camps. In the Islamic culture, which is the culture of most Syrian refugees, the mosque is a polyvalence place for spiritual, social, cultural, and educational activities. It is a sanctuary for those who are searching for psychological, spiritual comfort, knowledge, and enlightenment, detaching them from the external context. Equally, Schools can be considered as a sanctuary place for children and youth, a haven that can detach them from the harsh external circumstances of the camp. It is the place of refuge and knowledge.

In some informal refugee camps, such as Idlib camp inside Syria, the mosques have been reused as schools outside of prayer times due to the absence of educational facilities (Al-Bashir 2019). For worship places, whether they are places of worship and knowledge or not, there is a respect for their sanctity. Equally, in refugee camps, schools have their virtue, whether it is a tent, a caravan, or another type of structure. For instance, fig 16 shows two pictures, one of a school and another of a mosque within a refugee camp, illustrating how both places are structurally and in use preserved compared to the structures in the surrounding environment. The external configuration of the school and the mosque show how refugees respect those places by maintaining their physical structures and determine its spatial limits to sustain these structures intact thus, ensure the protection and continuity of the activities which are practiced using it. Accordingly, schools are environments that protect the community members who work as a protector for it as well. There is a mutual protection relationship between the community and educational facilities.

Under the assumption of psychological and physical protection, it serves to monitor the development and progress of children, implementing aspects that contribute to the protection of the children from the worst effects of the conflict and displacement. It also plants in them the notion of the role they play as a part of society. For instance, transferring necessary skills in the field of literacy, numeracy, the difference between right and wrong, risk and safety when deciding to perform a particular activity, allow children to detain tolls, and adapt to new conditions (Convention on the Rights of the Child 1989).

Accordingly, education and its 'built-in' environment offer physical and psychosocial protection components¹⁰ crucial for young refugee growth, development, and mental health. The protection components

¹⁰ The potential protective elements of education in emergencies. According to, (Convention on the Rights of the Child 1989):
Physical protection, Psychosocial protection

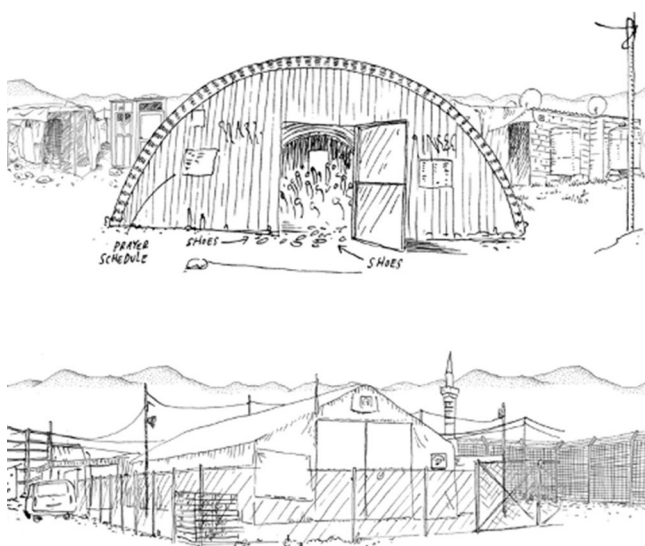


Fig. 16. School and mosque structures syrian domiz camp, Iraq. source: ("Refugee Republic: Jumpstarting a New Existence in an Emerging City. Everyday Life in a Refugee Camp." 2012)

are associated with the existence of a secure, methodical context when everything else is in flux (physical). This context provides a safe, stable, structured educational places for children where they can practice their daily physical or mental activities safely, isolated from the disorderly surrounding. School is a social structure that gathers children and adolescents with their peers, establishing socialization, providing opportunities to express themselves and being part of a social group, empowering their self-confidence and self-esteem, putting them within a healthy ambiance providing them with a sort of psychosocial protection.

The school inside the camp is a place of affiliation for children. Also, we must consider that the spatial path between the school and the home is part of the process of generating a psychological and spatial affiliation between these children and surrounding individuals (identity, attachment, familiarity).

By focusing upon the school environment, space must have an adequate design to provide a sense of protection to develop children's physical and mental health, but also to influence positively learning objectives. Children are susceptible to their environment; they discern the colors, the forms, and the most accurate details in their surrounded environment. Being psychological and intellectual beings, they use their senses to interact with the surrounding space. The gaze is an essential factor in reading and understanding the physical space around them.

In this line of thought, the design of educational spaces should take into account children's requirements and needs, catalyzing the overall space design.

Although, inside the camp, the classroom is usually a tent or caravan, presenting the same spatial characteristics of their 'Homes.' At the same time, the classroom is very poorly equipped, even with the efforts of some teachers in providing solutions to achieve more exciting and pleasant spaces, and distinguishing them from their homes considering new stimulus (as colors, forms, furniture, etc.) they contribute to children's development. Adding a board and chalks, colored paper clips, colorful ornamental ropes, individual studying tables can change the perception of the children towards school space and distinguish it from their "homes." At the same time, it fosters children to participate in the learning

Physical protection

Provides a safe, structured place for learning and play Articles 31, 38 Reaches out to all children, without discrimination Article 2

Offers means to identify children with special needs, such as the experience of trauma Article 19
or family separation

Care and supervision can be provided by teachers, in consultation with the parent Article 18
or guardian

Prepares children for appropriate work, which is not harmful or threatening their Articles 32, 34
health or security

Psychosocial protection

Gives children an identity as students, averts inadequacy felt by children out of school Article 28

Provides a venue for expression through play and cultural activities such as sports, Article 13, 31

Facilitates social integration of vulnerable children such as separated children and Article 20, 39

Supports social networks and community interaction for children and their families Article 15

Provides a daily routine and offers a sense of the future Article 38



1



2



3

Fig. 17. Colors and ornaments within different tent classrooms, creating a pleasant educational atmosphere.
Source: 1,2 ("Refugee Children Education" 2013), 3 ("Girls Draw in a UNICEF-Supported Child-Friendly Space in Debaga Camp." 2017).



1



2

Fig. 18. Children's spatial perception of the playground. Source: 1 (Christopher Herwig 2018), 2 (ANSA 2018)

process, enhancing their attachment and familiarity to this place (sense of belonging).

The existence of a playground is mandatory for children and an essential contributor to children's development. Usually, a playground's equipment is meticulously selected to protect children. According to the lack of resources in a refugee camp, the playground is often the void gap between two shelters, and its limits, mostly, are non-existent. For example, the delimitation of the playground can be defined as a few meters around the school "shelter," or by drawn lines on the ground using chalk or stones.

Children will perceive this limit and understand that they shouldn't transgress those stones or drawn lines, evidencing the limits of the playground. As such, the school is more than an educational space, providing children with a daily routine, provides them with the hope of a better future. (feeling of identity and attachment) It helps them to build social relationships, to rebuild their self-esteem and confidence, among others (attachment and familiarity), and to restore the sense of belonging in particular, and produce physical, psychosocial protection for them during playing.

Space elements may provide positive and negative stimuli such as enthusiasm, calmness, inspiration, anxiousness or tension, peace, or anger (Jalil, Yunus and Said 2012). Due to the severe circumstances of a refugee camp, children are often subjected to negative stimuli. Therefore they experience anxiousness, impulsive reaction, lack of concentration, and anger. To reduce the impact of these negative stressors on the child's psyche, the educational environment is one of the mine medium, and among the fundamental factors in the process of healing and recovering the refugee child's (Read 1996).

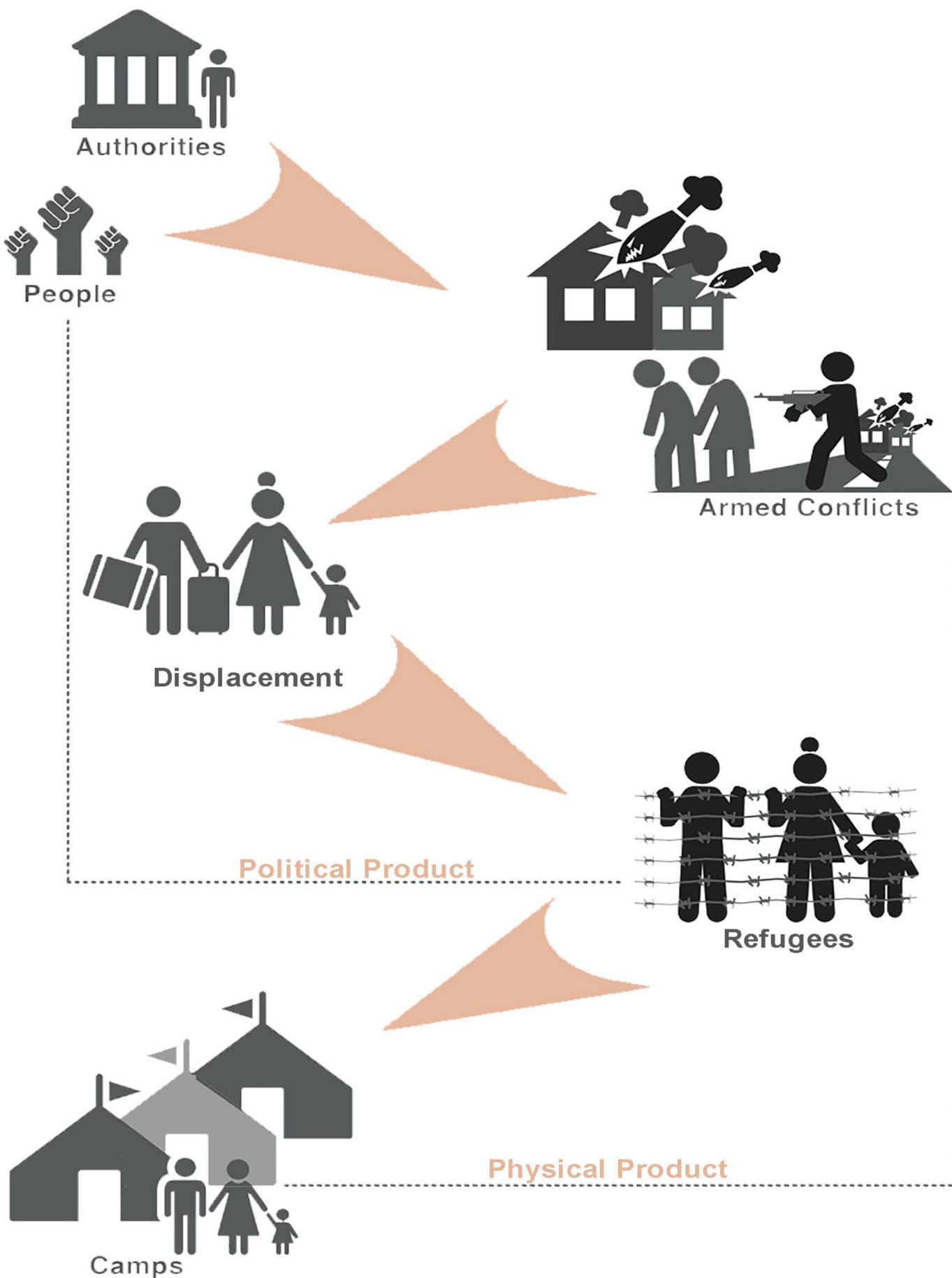


Fig. 19. The political, physical, product of the conflict. Source: G.H

Education facilities as a part of the camp planning

During conflicts and wars, many youths are forced to flee their homes and country. They settled temporarily in refugee camps with a secure present and an ambiguous future. Camps represent safe havens for them, the physical environment of the camp must contribute to youth refugees' development and thriving through its layout, order, and components. These camps should offer refugees with structures that enable them to grow and flourish through providing them with knowledge and education in addition to professional and social skills in order to give them the mediums to live better future. These structures such as schools, workshops, community centers, common, recreational structures, can aid youth refugees' and their families thus, all the community members. The absence or damage of such structures will hinder their opportunity to a better future. In the war context, relief is a humanitarian, political process that concentrates on keeping people alive, providing them with basic needs (water, sanitation, food, security, and shelter) by building refugee camps.

Camp can be defined as a spatial product of a complex process of negotiating between the UNHCR, local authorities, and NGOs. Moreover, camps can be defined as the humanitarian response that ensures the security of the people that have fled their countries, including three main aspects security, geography, accessibility. According to UNHCR, a camp should provide Shelter, Emergency relief items, Water and sanitation, Food, Healthcare and counseling, Registration, and legal aid. (UN High Commissioner for Refugees (UNHCR) 1948 n.d.)

An emergency operation response team is charged by the UN Refugee Agency, to evaluate the situation within the first 72 hours of the crisis, in order to lay the foundation stone for a refugee's camp.

The aid of governments, NGOs, and organizations provides primary refugee's needs such as food, clothing, healthcare, shelter, and hygiene items, clean water. According to the UNHCR, the basic needs in a refugee response should be "basic services and assistance in health, nutrition, WASH, food, shelter, energy, education, as well as domestic items and specialized services for people with specific needs" (UN High Commissioner for Refugees 2017). The reliefs in such a circumstance are concentrated on keeping people alive because people think conflicts are temporary, and that they come to go. Unfortunately, conflicts come to stay for years, and the temporary state became "permanent temporariness" (Abourahme 2015).

"People fear what they are ignorant of" Mustafa Mahmoud, the life in a refugee camp is the ignorance of those people. It's often poisonous because of the absence of the sense of belonging, the sense of normality. Thus, the essential pillars on which people built their life according to the physiological aspects identified by Mindy Thompson Fullilove (1996) formality, attachment, identity, which consist the sense of belonging to a place, clarify how People build their belonging to a place through the

interrelationships with their surroundings through spatial, social interactions.

The refugee camp is a juxtaposition of paradoxes, as temporariness and permanence, formality and informality, mobility, and immobility (Grbac 2013). When people move from one house to another, they experience stress and pressures because of the need for orienting in a strange environment, which means the stressors for those who were forced to flee their homes towards the anonymous camp are tremendous and aggressive, which makes their lives extremely complicated.

In their cities, refugees create mutual relationships with the structures of the cities, as daily life references generated unconsciously in their minds, enhance their familiarity and attachment to the city, consequently, the sense of locality, belonging. In camps, refugees are unable to create such relationships due to the absence of these references and the camp's unfamiliarity, since the life references are provided to refugees as packages of reserves aids and services that were borrowed from a stockpile in the host country or NGOs, or elsewhere. yet, it might be possible to acquire the essential services with their physical environments and structures. However, the sense of belonging and locality to these structures cannot be borrowed, which led to the need to create architectural environments that enable refugees to create spatial references and developing psychological, emotional attachment, and identity with such environments to promote their camps' life.

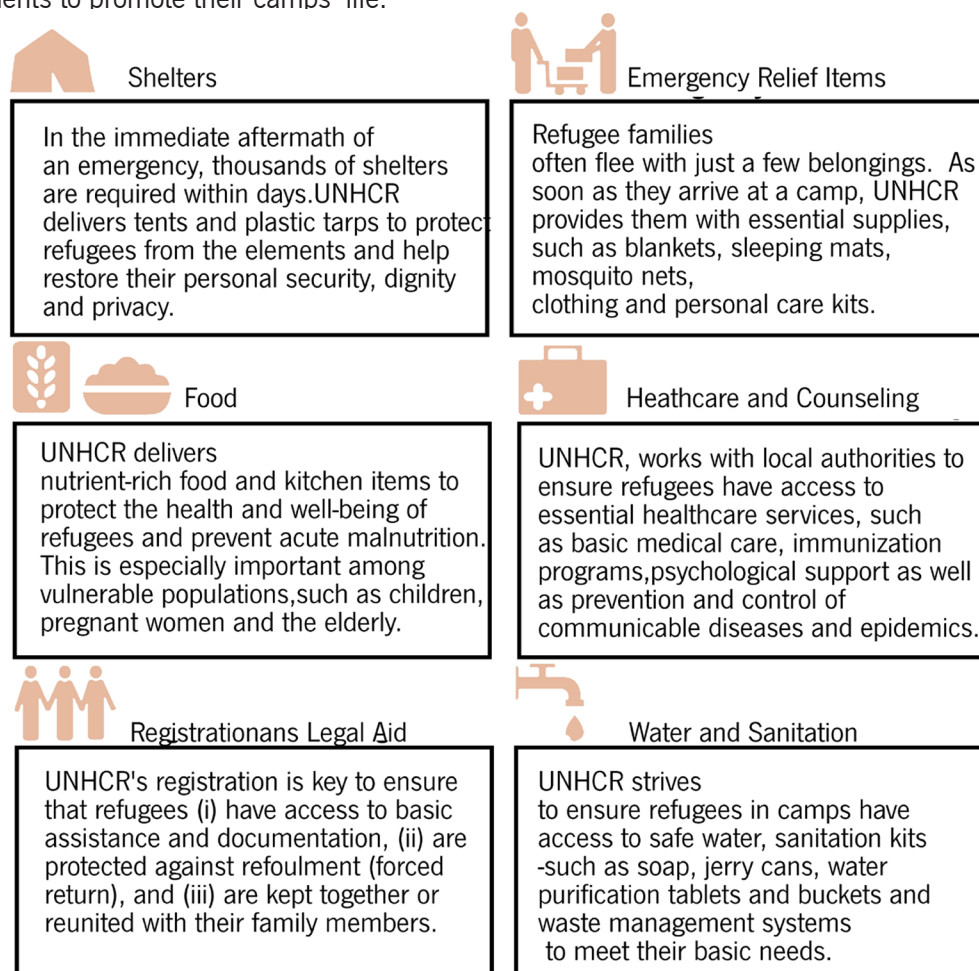


Fig. 20. Camp's services (UN High Commissioner for Refugees (UNHCR) n.d.)

In many instances, the camp is overpopulated, and it's being expanded to its maximum limits. For example, Al Zaatari Refugee Camp and Azraq camp in Jordan, have been turned into 'tent villages.' Governments and hosting countries are unable to provide the necessary services and infrastructures that provide refugees with a minimum level of quality. Institutions, particularly educational and social, are often absent due to lack of resources and financial support or even the geographical location of the camp.

Due to the Syrian conflicts, millions of people had fled their homes to neighboring countries. Al Zaatari Refugee Camp, founded in 2012, covering 5.3 Square kilometers, has expanded and reached its full capacity becoming Jordan's fourth biggest "city", it is a city of tents that hosts 80,000 Syrian refugees with 15 schools (Summers, 2017).

Although the Camp embraces social, cultural, economic, and educational facilities, yet they are insufficient because of the increasing number of refugees. In the Camp, 18,338 children have access to education in formal schools from an eligible population(6-17years) of 25,402, which means that almost 25 percent of Camp's children are out of the educational system. Along with the problem of Camp schools' incapacity to receive all the children, the long-distance between schools, and the culture of gender separation form obstacles for refugees' abilities to profit from their right to education which can lead to severe humanitarian consequences (Ledwith, 2014).

Azraq camp was founded in 2013, covering 14,7 Square kilometers. It is the second-largest refugee camp in Jordan. Hosting 36,550 Syrian refugees, the camp planning, built after Al Zaatari camp, takes into account the mistakes of the Al Zaatari camp. Azraq camp is hosting 36,550 Syrian refugees, the mistakes found in the Al Zaatari camp were considered during the camp planning. The camp has the capacity to host a maximum of 120,00-130,000 refugees, and it was built with the potential to be a temporary tent village that promotes a greater sense of ownership and community among refugees. Despite the efforts to guarantee access to education to all camp's children, such as two shifts school (as a result of the gender separation culture), Makani Centres¹¹ (Child-Friendly Spaces), 14% of the camp's children are out of schools (UNHCR, 2019).

As mentioned before, education has emerged as a humanitarian right since conflicts and displacement impacts are punitive on the refugee community. The provision of schools is one of the most evident elements in the relief programs due to the severe humanitarian consequences that can be produced by neglecting refugees' education. Hence, providing the emerging generation of refugees with education and schools influence shaping the peaceful future for their community and country by raising a generation upon the humanitarian and peaceful foundations. It will take humanitarian action beyond a

¹¹ According to UNICEF, "**Makani**" means "my space" in Arabic. **Makani centres** is a UNICEF Program provide vulnerable children both refugees and Jordanians access to learning support services and community-based child protection, early childhood development services to local communities.

Azraq refugee camp 2014, Jordan.



Al Zaatari refugee camp 2015, Jordan.

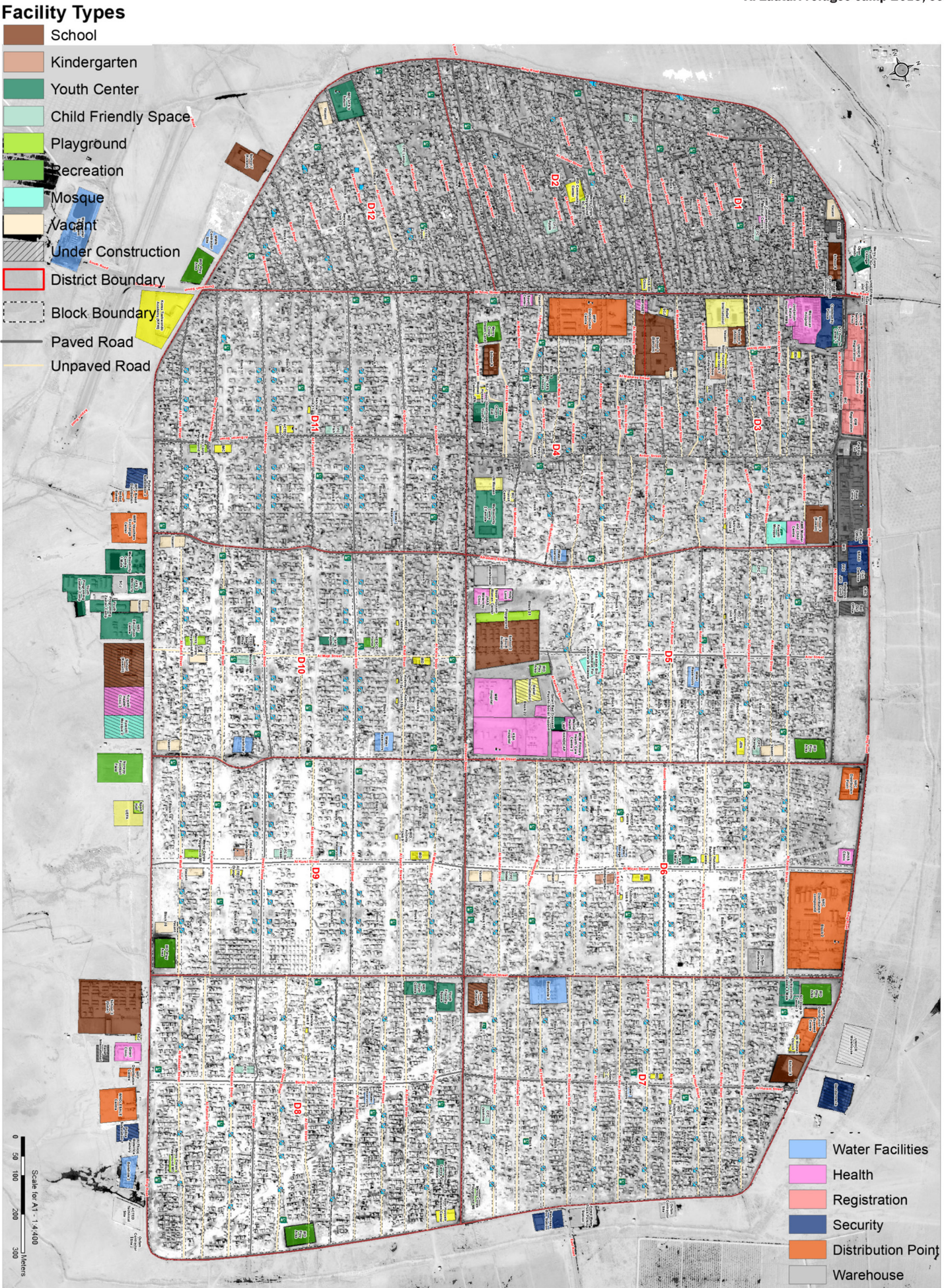


Fig. 21. Azraq and Al Zaatari camps facilities map. Source: (Unicef 2014), (Unicef 2015) and edited by G.H.

medicalized attempt to save lives and save the future and shape it.

Schools are enmeshed in our lives and have impacts on developing different life aspects of individuals such as improving their economic growth, strengthening the social bonds and social justice between communities, and so forth. In the case of the Syrian conflict Statistics, 50% of the people displaced to neighbouring countries are children ("Quick Facts: What You Need to Know about the Syria Crisis" 2020). Accordingly, creating an adequate, stimulating, and stable learning environment is essential for promoting positive childhood and community development. Education helps to develop cohesion within the refugee camp. As such, many educational facilities were built in refugee camps, all around the world, to support and help children to complete their education from one hand and support their families on the other hand. "The school should be not only a place to learn skills but also a psychological and emotional haven a place for children to be happy." as the CatalyticAction¹² team(2016) stated.

In such circumstances, architecture is a tool for healing, playing a significant role in helping during the coping process with the harsh circumstances of camp life. Consequently, camps should be thought of as a spatial phenomenon of diverse configurations that serve its residents. However, despite the attempts to create facilities that help and serve refugees, these facilities are either inadequate to meet all refugees needs or overstretched due to the increased number of refugees from one day to another(SUZUKI 2019).

In order to bridge the deficiency of different services facilities, it is reasonable to resort to facilities that already exist within the camp, places with a configuration that allows multifunctionality. These places identified as 'Spaces of exception¹³', can be defined as places of resilience, serving as many purposes as possible.

In light of the camp context and this research subject, schools can be assumed as spaces of exception as it includes all segments of society without discrimination. Moreover, as the school provides children with stimuli for their development in general, and it can be a polyvalence and resilient space for all the community if its components and design allows that. However, what are the criteria that must be followed for the camp's schools to be spaces of exception?

12 **CatalyticAction** is based in the UK. A non-profit design studio that works internationally with projects that can garner the potential to catalyze change in society. according to the studio internet site.

13 **'spaces of exception'** is a term used by Peter Grbac to define the refugee spaces that take a hybrid nature where "refugees and agency have worked simultaneously to create 'spaces of exception' that can transgress the boundaries of place and non-place." (GRBAC, 2013) 'space of exception' reused and defined in this research to explain the concepts and purposes of the research, referring to schools in refugee camps, as hybrid spaces that can be used to be multifunctional spaces by following certain criteria and having certain components.

Conclusion

In times of war and conflict, millions of people lose their homes, their countries, and their rights, and were forced to leave every detail of their life behind and displaced to the anonymous. Displacement is associated with the loss of the homeland, the loss of rights, and fundamentally associated with the loss of the sense of belonging as it's related to 'the psychology of place' which symbolizes the necessity of the physical locality for psychological health. The loss of the sense of belonging means the loss of place attachment, familiarity, and identity, which are the main pillars of physical and psychosocial life of the individuals.

The absence of the sense of belonging to space leads to the presence of Disorientation, Nostalgia, Alienation, as mentioned by Fullilove (1996), both Familiarity and Disorientation, Attachment and Nostalgia, Identity and Alienation are linked. The loss of a sense of belonging produces an inability to having a physical attachment to a place that creates a predictable need for reorienting the self in an unfamiliar space.

Community displacement is a form of destruction during conflicts, it causes the loss of the three main psychological aspects of belonging to a place, and produces the loss of the sense of self, and sense of identity as place is a core element in identity formation from one hand and a symbol of the self-identity from the other hand, this self-identity is depending on having a geographical and psychological place inside a community inside a society. The notion of place's identity and attachment and formality are related to the security and self-protection of the individuals.

Camps' settling and the chaos and havoc produced by conflict and displacement have numerous impacts on people life. The devastation reach the emotional, spiritual and social bonds, aside from the physical and psychological disruption and the absence of a sense of safety, identity, and belonging, and the absence of many human rights, which in turn have a severe humanitarian circumstances for those who lost them.

In times of the Syrian conflict and displacement, millions of refugees settle in camps in the neighbouring country. The impacts of conflicts and displacement are more crucial on children and youth as they are less physically, mentally, emotionally resilient than other community groups. Moreover, they are more likely to face the risk of abuse, exploitation, neglect, and violence, which can threaten their lives and destruct their future and strip their second chance in living a healthy, peaceful life, which in the short term impact the development of their societies gravely, and in the long term the entire global nations. Education conversant with all life's aspects, it catalyses people to developed and has a better quality of life it is a symbol of stability state, and a form of protection for children and youth. "Where there is no

education, there will be no nation” Moza Bint Nasser¹⁴, 2019 will a key concept during the social forum of the Human Rights Council, held on Geneva, October 2019. Education helps individuals and generations to restore, to develop and heal, it helps to rebuild the foundations of a civil communities to develop and rebuild the entire nation. Thus, education is a form of protection and stability for youth and children, education spaces perceived as safe havens within the camp barriers by them, it makes them feel the importance of their presence in this society and that they have an important role to play in building peace and building the future of their countries.

The educational environment and its components help them to heal, to develop to grow, maintains their mental and psychological health, provides them with the hope and the intention to complete their life and provide them with the right weapons that help them to fight to have a better future. Thus, education and stability, education and protection, education and safety, all are binaries closely associated with securing the life and future of those refugees.

Subsequently, many humanitarian and charitable organizations, NGOs, as well as UNHCR, have worked to create special and distinctive schooling environments for refugees inside the camps with the aim of improving their social, educational and psychological lives and providing them with a second chance to live a decent and safe life for children and youth and their families. Accordingly, many educational projects that were established in the refugee camps were chosen to analyse and study their standards, concepts, and purposes in the second chapter.

¹⁴ **Moza bint Nasser** is the consort of Sheikh Hamad bin Khalifa Al Thani, former Emir of the State of Qatar. Chairperson of “ Education Above All” and advocate of UN Sustainable Development Goals.

The structures of life within the camp.



Recreational
Space



Classroom



Sewing
Workshop



Services
Distribution Center



Computer
Center



Mosque



Hospital



Fig. 22. The structures of a refugee camp. Source: Photomontage by G.H, photos by ("TCA President Visits Refugee Camps in Southeastern Turkey" 2015).



Fig. 23. Home tent. Source: G.H

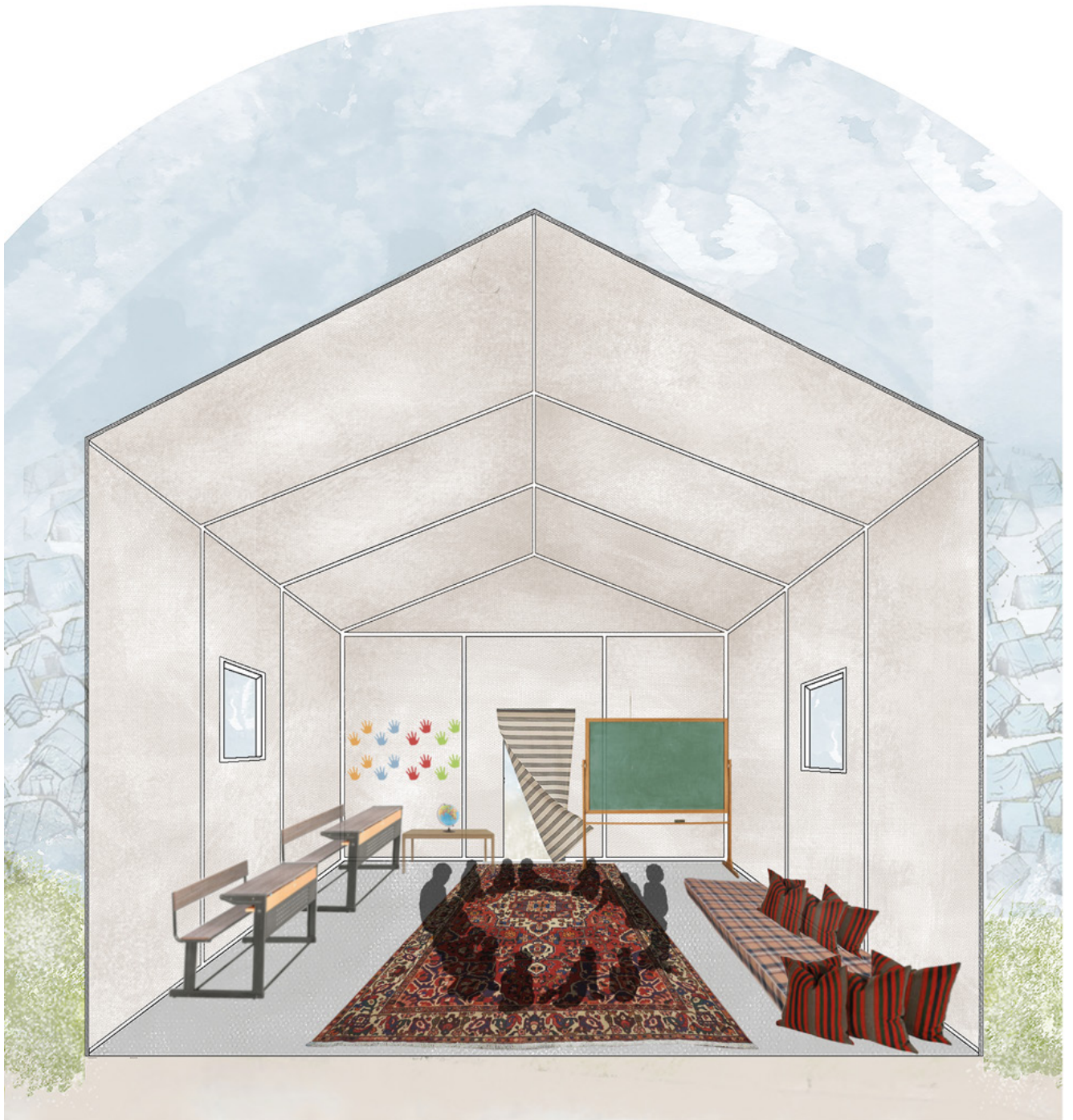


Fig. 24. School tent. Source: G.H

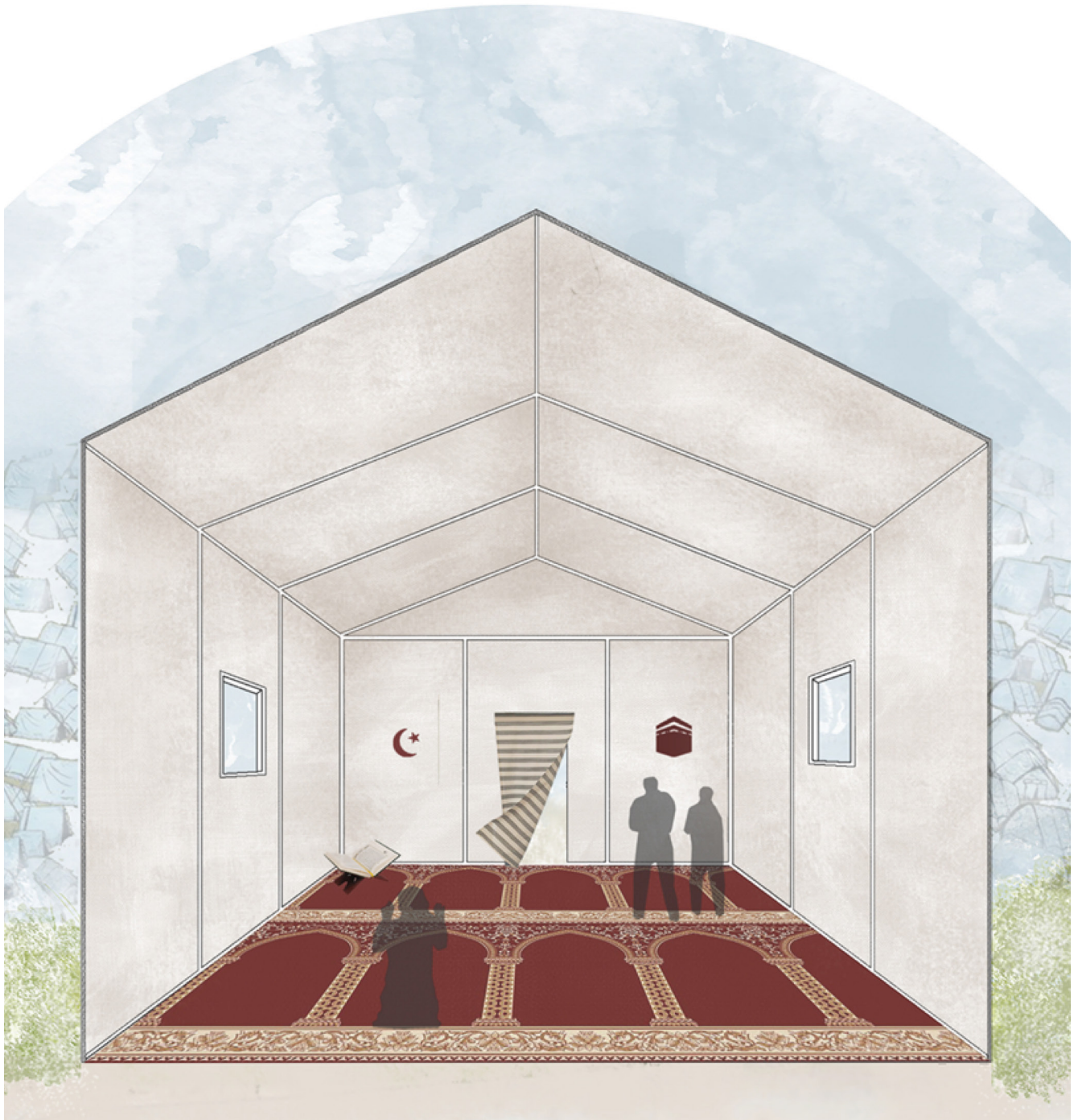


Fig. 25. Mosque tent. Source: G.H

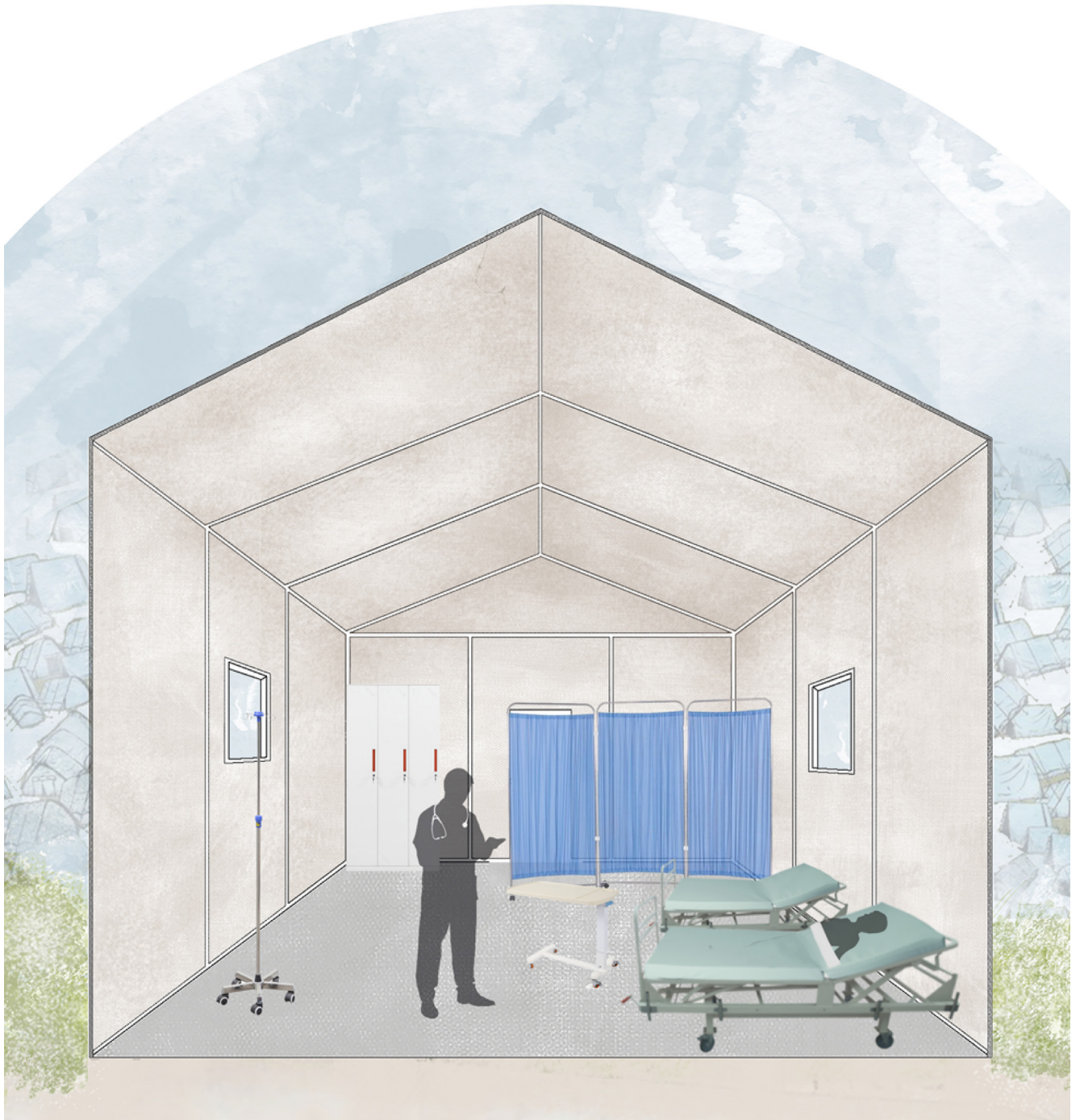


Fig. 26. Hospital tent. Source: G.H



Fig. 27. Services center tent. Source: G.H



Fig. 28. Refugees children are growing up between camp life's perplexity. Source: (George Butler 2013).

CHAPTER II | **Particular educational models**

The criteria in choosing the cases of study, the purposes of each case

Introduction to the cases of study

100 Classrooms For Refugee Children, Al Zaatari classroom (100C

Al Zaatari), Azraaq school (100 C Azraaq)

The re: build, construction system. (The Re: Build)

Jarahieh school.

The EAA/ZHA classroom prototype. (EAA/ZHA)

Maidan Tent

Conclusion



Fig. 29. Cases of study. Source: G.H.

The criteria in choosing the cases of study, the purposes of each project

As the Syrian civil war has displaced millions of people, about 5.6 million Syrians are refugees in Lebanon, Turkey, Jordan, and beyond. Almost half of refugees' populations are children, according to the United Nations' Commission for Refugees (UNHCR 2018). A considerable number of refugees' children do not have access to education due to the lack of facilities and resources inside the camp and its temporal circumstances, which in turn leads to a deficiency in social, public, and common infrastructures.

The following study cases were chosen to demonstrate new school buildings models applied in Syrian refugee camps in the neighbouring countries of Syria. With camps become overpopulated, it impedes the provision of services facilities for all refugees, particularly schools, and social facilities.

The study cases were chosen according to several factors: design components, structure configuration, construction materials, and techniques, along with educational, economic, social, and humanitarian purposes of each project. However, all of them tackled the problem of lack of education and its facilities and intended to provide innovative architectural solutions for both refugees and host communities.

100 Classrooms for Refugee Children Program



AL Zaatari classroom

Status: One building completed in
AL Zaatari village

Location: AL Zaatari Village, Jordan

Date: 2016 – 2017

Cost: €5,000

Materials: Earth construction



Fig. 30. AL Zaatari classroom. Source: EAHR organization.



Fig. 31. Azraq school. Source: EAHR organization.

Azraq school

Status: second building completed in
Azraq village

Location: Al-Azraq Village, Jordan

Date: 2017-2018

Materials: Earth construction



100C Al Zaatari School is a sandbag building raised for both refugees and Jordanian children in AL Zaatari village in Jordan, located outside Al Zaatari Syrian refugee camps, the first-largest refugee camp in Jordan, 10 km from the Syrian border. The school was built by community assistance and Emergency Architecture & Human Rights organisation¹⁵.

100C Azraq School is built with compressed earthen bricks by community and emergency architecture & human rights organization (EAHR) for Syrian refugees' children and Jordanian children in Azraq village, located just outside the Azraq refugee camp.

The schools were chosen according to projects main purpose and particular aspects:

The purpose of both projects is to provide educational facilities to children from both communities (refugees and locals).

The design of both schools was influenced by the refugee's formal and spatial background to promote a sense of belonging for refugees (psychological and social aspects). Also, the polyvalence of space was explored as schools were designed to function as a school and community centre (social, educational aspects).

Constructive materials and techniques, as the projects were built using low-cost and available local and resources. Earth construction technics are familiar to community members, engaging them together in the construction site by applying their expertise in the construction process (economic and social aspects).

¹⁵ **Emergency Architecture & Human Rights organisation (EAHR)** Is a NGO with headquarters in Copenhagen, Rome and Santiago, Chile, and an architectural platform working for social groups that face humanitarian emergencies, cultural conflicts, inequalities and marginalization. According to EAHR official site. <https://ea-hr.com/>.

The Re: Build school



Location: Za'atari refugee camp, Jordan

Cost: 30,000 Euros

Size: 16m x 16m

Date: 2015-2016

Materials: Earth construction



Fig. 32. Re: Build school in AL Zaatari camp. Source: Pilosio Building Peace.

Re: build, is a school for refugees' children in Al Zaatari camp in Jordan. The school construction lasted for two weeks and was built by Pilosio Building Peace¹⁶ and other organisations engaging the Syrian refugees' workers from Al Zaatari refugee camp. The project developed a new constructive system based upon safe, transportable, and reusable materials and structures. The project can host 120 children in double shifts.

The project's main purpose is to provide children with a safe, efficient, educational, recreational environment that empowers them to build their future.

As such, the space design which allows to serve different functions, besides a school, in order to establish a community hub. Construction material and techniques which employed local natural resources 'earth construction'. The efficiency of the structure, as the structural components, are transportable and reusable (economic aspect). Simultaneously, as the project concerning the social aspect since these techniques allow a rapid construction solution that can be built with the help of those who need such solutions and answering their need for urgent humanitarian aids in times of crisis. The new notions spread by the project, as women contribute to the construction process, spreading the notion of gender equality within the camps (social aspect).

¹⁶ **Pilosio Building Peace** is a humanitarian offshoot of Pilosio SpA, an Italian company started in 1961 that produces, and sells and provides, scaffolding and formwork for construction sites, maintenance and restoration works.

Jarahieh School for Syrian Refugee Children



Location: Syrians refugee camp in AL-Marj, Bekaa valley, Lebanon.

Size: 422 square meters.

Date: 2016

Materials: recycled materials, structure



Fig. 33. Jarahieh school. Source: Cemal Emden, CatalyticAction.

Jarahieh school was built by CatalyticAction¹⁷, it provides children with quality educational space and employed recycled structural components in order to rebuild the old camp school.

The project's main purpose is to improve the existing Jarahieh school (with almost 320 children) and provide a community hub.

Construction techniques and materials, as the project followed the rebuilding approaches and repairing the existing 'tent school,' and uses available reusable materials. (economical aspect).

Concerning the social aspect, as refugees and locals' workers were engaged together in the construction process. And as the project has a dual objective of being school and safe shelter for all the community members.

¹⁷ **CatalyticAction** is a UK-based not-for-profit, design studio that works internationally; intervening with projects that catalyse positive change in society.

The EAA/ZHA Classroom prototype. (The EAA/ZHA)



Location: It will be built in 12 countries around the world.
In the context of Syrian refugee camp, in Turkey.
Size: 12m x 8m
Date: 2019-post-2022
Materials: Innovative technological model



Fig. 34. EAA/ZHA classroom. Source: Extracted from the published video of the project.

EAA/ZHA classroom is a school prototype, built by Education Above All¹⁸ (EAA), Zaha Hadid Architects¹⁹ (ZHA), that provides a school with an innovative educational environment. The classroom can embrace 45 students a day, and its structure is transportable, sustainable, and durable with artfully designed and polyvalence space.

The project's main purpose is to provide children (OOSC)²⁰, with access to quality education by proposing an educational module questioning the traditional refugee camp classroom.

The design is based upon multifunctional premises being the classroom a focal point for the community (Social, Educational Aspect). Construction techniques and the high-efficiency material, as the structure is mobile and easy to be assembled and dismantled and deployed, which providing an urgent humanitarian response in the time of the crises. The project's economic efficiency as it was constructing upon the fact that the structures will be built at the first step to be used in The World Cup 2022, and post The World Cup 2022 the structures will be adopted as educational spaces (Economical Aspect).

18 **The Education Above All (EAA)**, is a global education foundation established in 2012 by Her Highness Sheikhha Moza bint Nasser, to protect the right of children and youth to quality education and bringing hope and a real opportunity to the lives of impoverished and marginalized children, youth and women.

19 **Zaha Hadid Architects (ZHA)**, is a British architecture and design firm founded by Zaha Hadid 1980, with its main office situated in Clerkenwell, London.

20 **OOSC**, out of school children=

Maidan Tent



Location: Ritsona refugee camp in Greece.

Size: 200 square meters

Date: 2016

Cost: 50,000 euros



Fig. 35. Maidan Tent in Ritsona refugee camp in Greece. Source: The site of the project ("The Tent, Madain Tent" 2016).

The 'Maidan Tent' is a large tent designed as a covered public square in Ritsona refugee camp in Greece, by ABVM²¹ studio in collaboration with the UN international organization for migration. The tent can host nearly 100 people, providing a social, common, gathering space for refugees within the camp.

The main purpose of the project is to create a public, collective, adaptable space that recoups the lack of social spaces within refugee camps.

As the school was designed under psychosocial purposes, to serve as a multi-purpose social space that can host activities, in an interactive and intercultural environment, and being a healing space to recoup the sense of belonging (social, cultural aspect).

Construction materials and structure, as the tent was built using low-cost material to form a transportable structure that comprises aluminium and steel, the fabric canopy (economical aspect).

21

ABVM is an architecture practice based in Milan and Zurich focused on social and sustainable architecture.

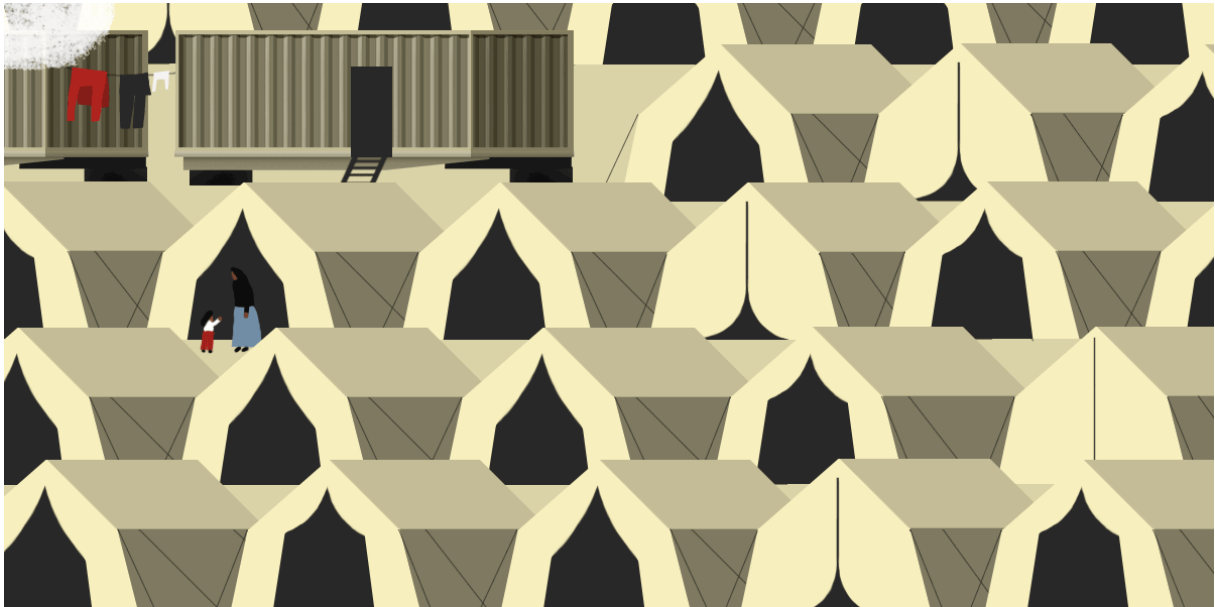


Fig. 36. Education in the arid margins. Source: by Evgenia Barinova.

Introduction to the case studies

“In emergency contexts, children regularly struggle with the psychological trauma of displacement, war and loss”

(Ehnholt & Yule, 2006)

The following study cases were built in different countries around the world to support Syrian refugees. The projects intend to build particular Edu-Social models that can contribute to the life of refugee children and families, promoting life aspects for both refugee and host communities the following case study will be analysed according to the following sequence:

The design

Material and structure

Form and function

Socio-economic profile of the project

100 Classrooms For Refugee Children

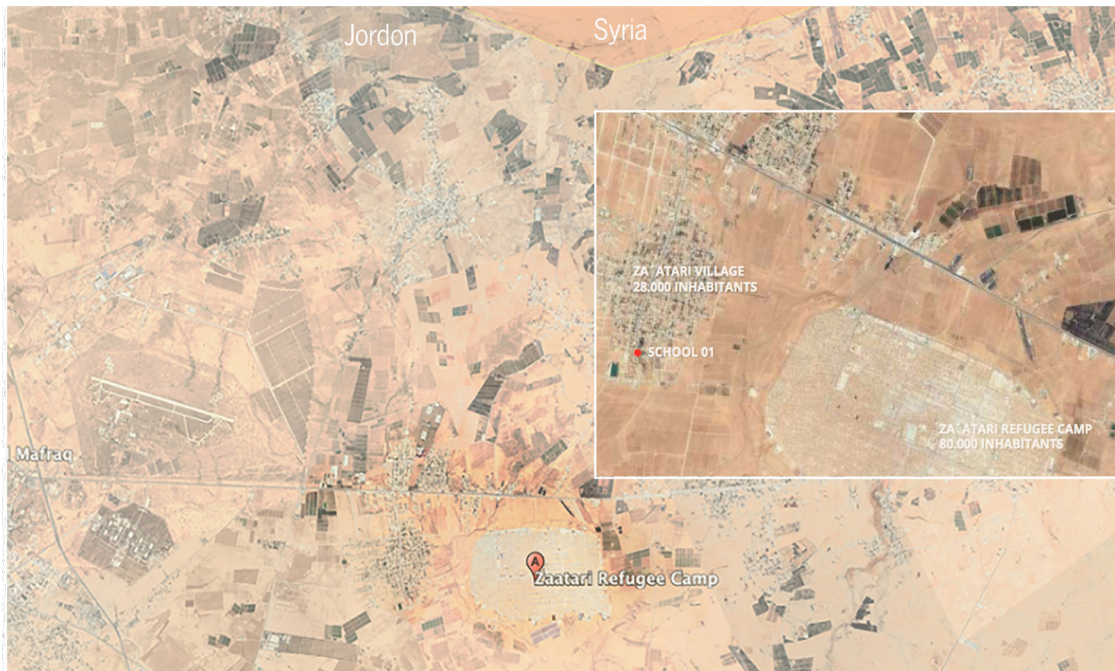


Fig. 39. 100C AL Zaatar classroom site plan and location inside AL Zaatar Village, Jordan. Source: Google earth



Fig. 37. 100C Al zaatari calssrom. Source: EAHR.



Fig. 38. Traditional houses in shape of a Domes in Hama region Cheikh Hilal Village, Syria. Source: (Saverio Mecca 2009).

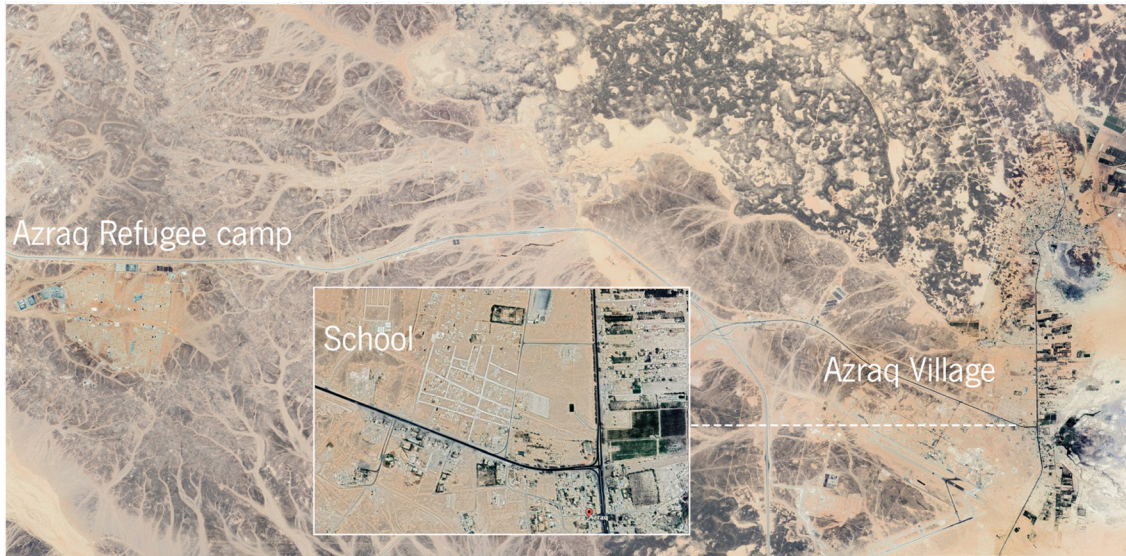


Fig. 40. 100C Azraq School site plan and location inside Azraq village, Jordan. Source: Google earth.



Fig. 41. 100C Azraq school. Source: EAHR organization.



Fig. 42.



Fig. 42. Domes on pendentives in Idlib Giobas village, Syria. Source: (Saverio Mecca 2009).

Fig. 43. View of a row of traditional houses with domes in Feijdane village north of Syria. Source: (Saverio Mecca 2009).

100 Classrooms For Refugee Children

Al Zaatari classroom. (100 C Al Zaatari)

Azraq school. (100 C Azraq)

Location: Jordan

Introduction:

In Jordan, 38 percent of syrian children aged between 15-17 years old are not in school, and two out of three refugee children tend to drop out of education due to the lack of schools', according to UNCHR. The International Organization Emergency Architecture and Human Rights (EAHR), decided to launch the program "100 classrooms and football". It aims to build schools with the support of both locals and refugee communities in order to host both syrian and jordanian children who don't have access to quality education. Such as the case in the AL Zaatari village and refugee camp.

The design:

100C Al Zaatari Classroom and 100C Azraq School

The design was a result of a collaborative process between EAHR and The local NGOS and Acting For Change Jordan²² and local and refugee communities.

The meetings between the organization and both communities manifest the necessity for affordable and weather adaptable structures that provide Syrian refugees and local Jordanian children with an efficient and comprehensive educational environment. Enrolling both communities (local and refugees), the project was established as a collaborative projective.

100C Al Zaatari school is a sandbag school built as an extension of the existing school using the SuperAdobe²³ technique, in Al Zaatari village. 100C Azraq school, is a school built using earth blocks in Azraq village near to Azraq camp. The architectural design took inspiration from Syrian vernacular architecture. The construction techniques are familiar to the refugees once, and its design departs from traditional Syrian use of compressed earth/adobe bricks. "most of these people used to work with these materials back in homes, so they know how to handle them. Professional help with the typology and the building technique," Di Marco 2015. EAHR's website states that the project was built to serves communities and was following the universal declaration of human rights (U.N. Paris 1948) and the 2030 U.N.' sustainable development goals.

²² **Acting for Change Jordan** is a charitable organization founded by Kotaiba Alabdullah which provides aid to Syrian refugees and low-income Jordanians. The projects of the organization range from distributing basic necessities such as food parcels and clothes to refurbishing schools and providing educational equipment to supplying disability aids.

²³ **SuperAdobe** is a form of earthbag architecture developed by Nader Khalili, the architect, and Cal-Earth founder, using long sandbags, barbed wire, and on-site earth. (eco domes africa 2017).

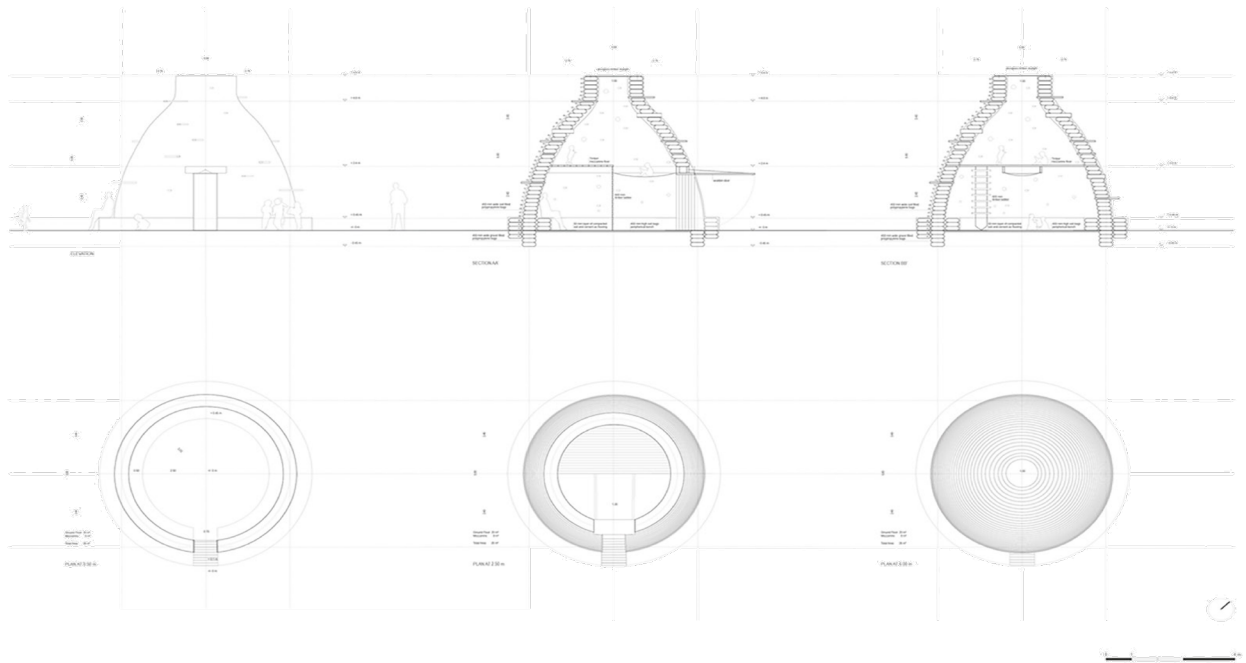


Fig. 44. 100C AL Zaatari classroom plan. Source: EAHR organization.

Fig. 45. 100C Azraq school plans. Source: EAHR organization.



100C AL Zaatari clssroom



Fig. 46. Material and structure of the 100C AL Zaatari classroom. Source: EAHR organization.



Fig. 47. Dome form and configuration and the use of the 100C AL Zaatari classroom by and children their families.. Source: EAHR organization.



Fig. 48. School construction Team refugees, locals, and international workers. Source: EAHR organization.

100C Azraq school



Fig. 49. Construction material and structure of 100C Azraq school. Source: EAHR organization.

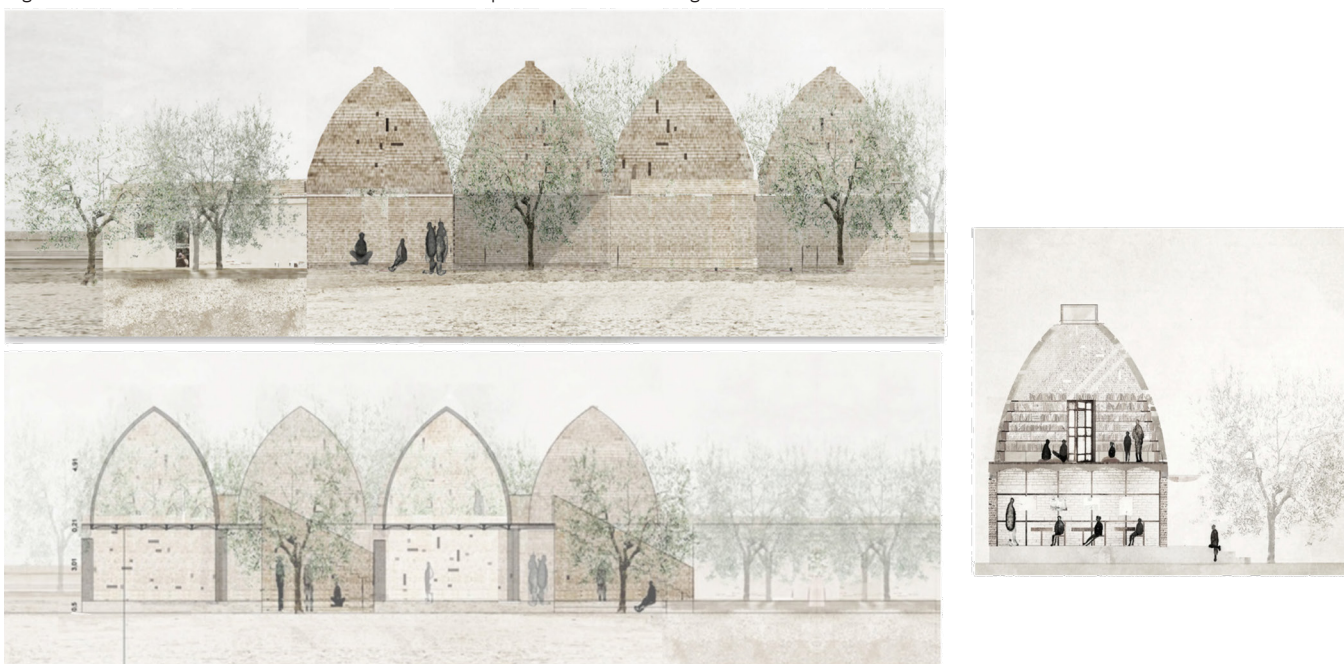


Fig. 50. Form and configuration of 100C Azraq school. Source: EAHR organization.

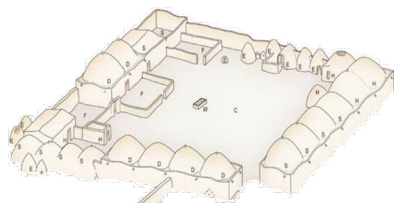


Fig. 52. A traditional housing in Oum Aamoud village, Syria. (Saverio Mecca 2009).



Fig. 53. 100C Azraq landscape. Source: EAHR organization.



Fig. 51. Influence of Syrian architecture of the school design and landscape of 100C Azraq school. Source: EAHR organization



Material and structure:

100C Al Zaatari classroom was constructed as a giant beehive with earth material. The structure is a 25 sqm classroom with a dome shape. Applying the “super-adobe “ technique and using material with high performance and thermal efficiency, as the interior environment can gain four to five degrees in the winter and lowers the temperature by six to seven degrees in the summer compared to traditional buildings.

100C Azraq school used the same earth construction material but applying different techniques by using earth compressed blocks to make bricks and tiles, its structure consists of sequences of groups of domes as classrooms with exterior spaces.

Both schools’ structures are maintainable since the refugee and the local population are familiar with both construction techniques. A ninety-eight-year-old refugee Um Sultan recalled: “ I used to make the plaster of our house every year. We used mainly soil and water and mixed it with straws. Straws make the structure more resistant, especially when it rains”. Following this, and once the architecture principles were inspired by the traditional earth architecture from Aleppo and Homs, that allowed to strengthen refugees’ sense of identity and belong to this place.

Form and function:

100C Al Zaatari classroom

The layout of the classroom is a circle, being the “furniture” part of the basic structure. It is design as an adaptable space for different uses: a classroom, a community council (a ‘Majlis,’ in Arabic, a common space for locals and refugees). The double high of the building enabled the architects to provide recreational elements (an interior playground), including a net and rope stairs. The giant beehive form can be adopted by children as a climbing wall, a playing area in its exterior, attracting them to be in and around the school. The structure has light voids ‘Khanat’ as it called in Arabic; this sort of voids provides the interior environment with pleasant daylight and air circulations.

100C Azraq school

The form is inspired by traditional Syrian rural architecture, and the building holds up to 200 children in double shifts.

The layout of the project consists of a sequence of 5 regular classrooms (together with other services such as one library/literacy centre, two multipurpose classrooms with solar-panelled electricity,

one kitchen, two toilet blocks, and sports facilities). Exterior spaces, which are private or semi-private patios, form the playground for children and the public square for the community once they are understood as common spaces for the community out of class time.

The structure has light voids 'Khanat' as it called in Arabic, this sort of voids provides the interior environment with pleasant daylight and air circulations.

Socio-economic profile of the project:

During the construction process of both projects, the local workers and refugees were trained on the construction techniques (SuperAdobe, Earth Compressed Bricks), providing them with skills that can help them in finding job opportunities. For refugees, having the chance to participate in both projects' construction empowers their sense of communitarian identity as well as belonging. At the same time, the participation among locals, in the construction process, improves the integration between communities, strengthening social cohesion.

Both projects have a dual purpose to serve children and their families, as a school for children in the morning (educational purposes) and a community centre and social hub during the afternoon (cultural, social purposes).

Conclusion:

"Our goal is to build 100 classrooms in the next three to four years, this doesn't mean that EAHR will build all of them, because during the construction phase we are training refugees to build, so that they can construct other classrooms by themselves". Michele de Marco, director of EAHR Denmark.

Both projects evidence a collaborative process between the local and refugee communities. These processes were developed under the conviction of engaging both refugees and locals. As such, the process started by gathering sessions between the organization and the locals/refugees aiming to discuss ideas and applications of an efficient environment (socially, economically, and architecturally). Once the design process was simple, avoiding skilled labour, it served the refugees as active agents of its construction. However, the technical knowledge of some refugees and the expertise of the international experts led to the success of the first two classrooms. The projects allow enhancing the professional skills of refugees and locals, moreover, it enhances refugees' sense of autonomy and self-confidence. The projects were built by and to host refugees and locals, like homemade food, pointing out how significant and efficient is the contribution of the community in the projects collectively to break bonds of discrimination, strengthening social cohesion.

Multi-purpose:

The spatial organization
of the space is flexible and
multi-functional.

The contexts:

To use in all the contexts
that allow earth construction.

Playground: 100C Azraq

The courtyard provides
a space
for social activities.

Playground: 100C Al Zaatari

The internal and external spatial
features of the project provide
'playground' for the children.

Transportable:

Non-Transferable as structure,
transferable as a concept, easy to
install, teach, provide self-construction
techniques and tools.

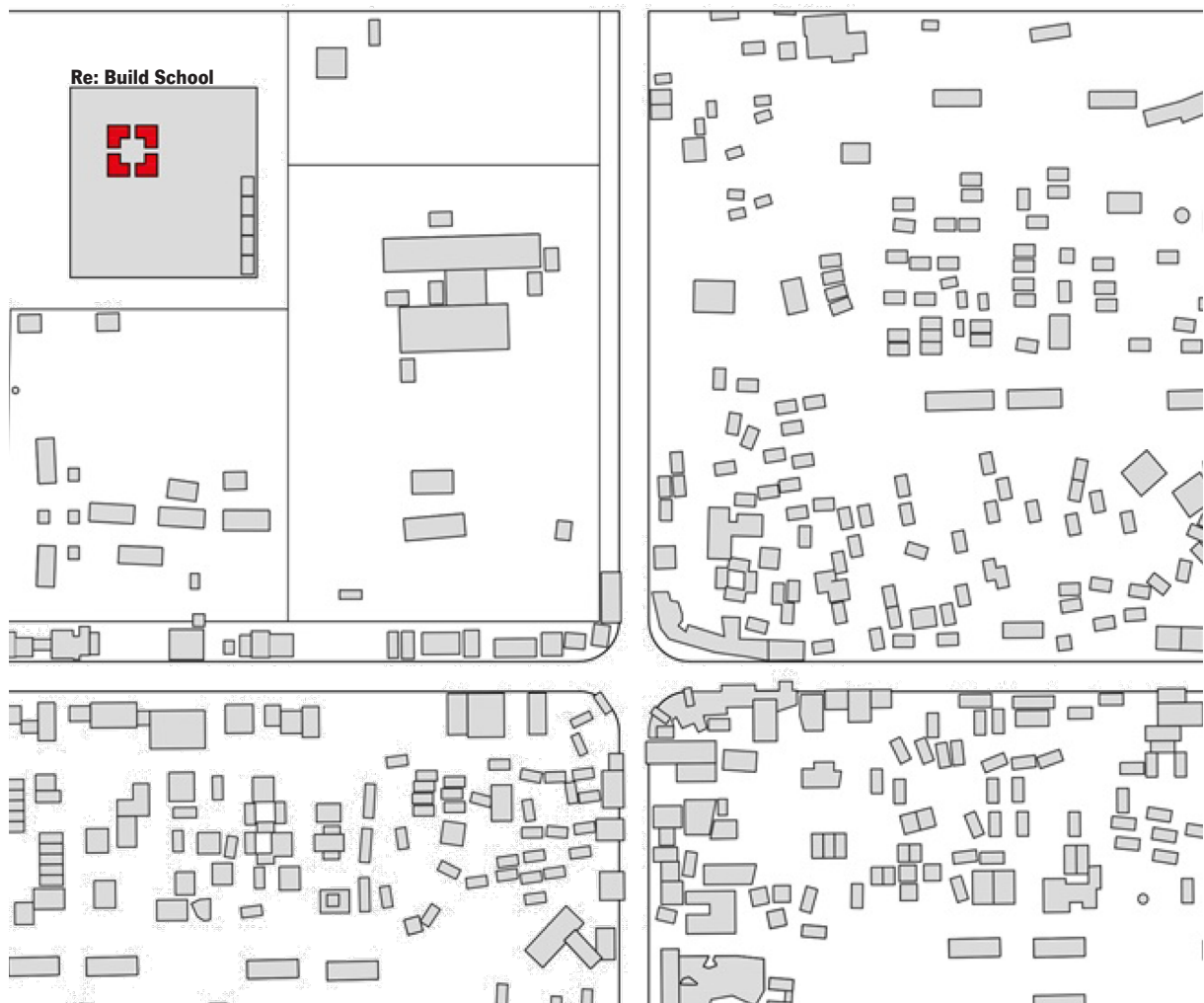
Materials and social-technical aspect:

Earth materials allow self-construction,
durable and versatile, have insulation
qualities, produce in the site with
a social corporation.

The RE: BUILD construction system



Fig. 54. RE:BUILD School site plan in AL Zaatri camp, Jordan. Source: Pilosio Building Peace.



Schools for Refugee Children in Jordan built Using Scaffolding and Sand. (The RE: BUILD)

Location: Jordan

Introduction:

The system is based upon using earth material with scaffolding panels and grids to construct well-insulated and low-cost temporary structures that provide safe and suitable buildings for refugees. By using sustainable materials that are locally and widely available, the earth materials and reusable components, producing a mobile structure that is easy to assemble and disassemble. The system is a redeploy building system that can be used to construct schools, clinics, and community centres, thus serving different community needs in the context of a humanitarian emergency and being able to be expanded by adding more units.

“All these people around the world living in refugee camps are living in very, very horrible conditions, in plastic sheets, in tents. How can we have an impact on the lives of these people, [considering that] the issue of refugees — and, in general, of the homeless — is to become one of the biggest issues of the future?” Says Luca Drigani, 2015. The project was constructed by a calibration between the architects Cameron Sinclair²⁴ and Pouya Khazeli²⁵, non-profits Save The Children Italy²⁶ and relief international²⁷, and scaffold company Pilosio Building Peace, their main purpose is to improve refugees’ lives, focusing upon schools.

The design:

The increasing number of refugees in Jordan demands to build more services facilities. Children represent a large proportion of the refugees’ numbers, and they lack access to education due to the lack of educational resources and environments. In this context, the design focuses on building educational environments that can support learning activities and provide children with safe and healthy environments that promote their physical and psychosocial health. On the other hand, the school provides the refugee community with facilities able to recoup the absence of social, cultural common spaces within the camp.

Material and structure:

The school structures are made of natural and low-cost materials, consisting of two thin walls bonded together by a light metal mesh to form and support thick wall of gravel, sand, or earth to create a

²⁴ **Cameron Sinclair** is a designer, writer and one of the pioneers in socially responsive architecture. He is currently serving as executive director of Armory of Harmony, a US-based organization focused on repurposing decommissioned weapons into musical instruments.

²⁵ **Pouya Khazaeli** is an Iranian architect. He founded Rai Studio in June 2007.

²⁶ **Save The Children Italy** was established in the United Kingdom in 1919 to improve the lives of children through better education, health care, and economic opportunities, as well as providing emergency aid in natural disasters, war, and other conflicts.

²⁷ **Relief International** is a humanitarian non-profit agency that provides emergency relief, economic rehabilitation, development assistance, and program services to vulnerable communities worldwide. Relief International UK is non-political and non-sectarian in its mission. It is based in Washington, D.C. and in London.

solid standing structure.

All the materials and structural components are locally also responding to the local climate of the camp. As such the building can be considered a sustainable and economically affordable construction.

In addition, the project has containers, to receive redirected rainwater to be applied later on different purposes in order to recoup water deficiency as the camp is located in a desert area. According to the architect luca drigani, “the idea is to use directly the earth beneath your feet as the material of construction. Here it happens simply by filling in between the provided frameworks for the walls by the earth. The roof panels filled by the earth may also act as flower panels to produce groceries. This simple method corresponds to the local climate as well as providing a natural life cycle that prevents the earth from pollution”. Climate as well as providing a natural life cycle that prevents the earth from pollution”. (Chlo Vadol 2015).

Form and function:

The model formed of a group of classrooms with an internal patio providing a safe playground for children. Every three classrooms are developed under an I shape layout, and each classroom is 16-by-16-meter can hold up 25 children. The entire school provides educational space for 200 children in double shifts.

The school spatial structure creates insulated interiors environments with the flexibility to be adopted by various functions and activities for children and their community.

Socio-economic profile of the project:

The project aims to establish a basic framework for schools in refugee camps. It was built with the social engagement of locals from outside the camps, and refugees from the camp. At the same time, women and men contributed to the project construction, which is exceptional work for females in such communities. The engagement of refugees in the construction process enhances their professional skills and, above all, serves to form a sense of community and reclaim the camp as home. In the same order, the engagement of women in the construction site raises a new notion of gender equality and foster their role in the community development, increasing awareness about the importance of supporting women's development and independence.

The project is principally based on the intention of building an educational environment. However, it incorporates other objectives as a multifunctional social space.



Fig. 55. Re: Build Construction material and structure. Source: Pilosio Building Peace



Fig. 56. Community building school for their children. Source: Pilosio Building Peace.

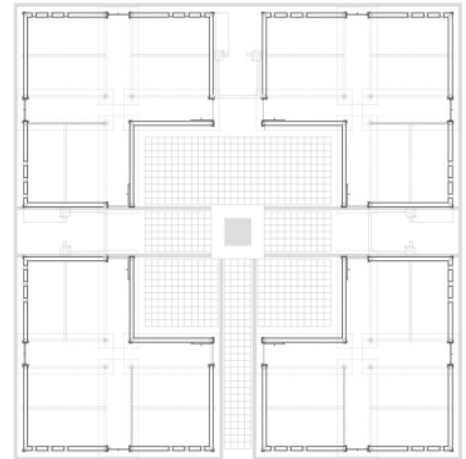


Fig. 57. Re: Build school plan, AL Zaatari camp Source: Pilosio Building Peace.

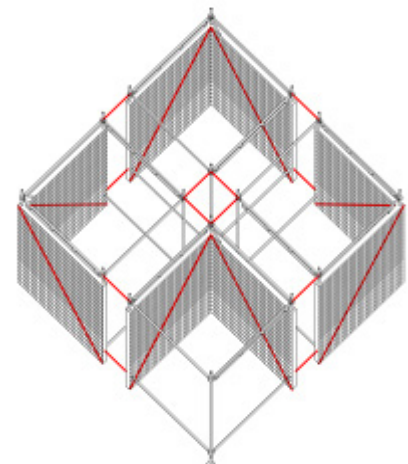


Fig. 58. L shape forms a group of classrooms. Source: Pilosio Building Peace.

Conclusion:

The project tackles the complex problem of the deficiency in services structures in refugee camps by providing the community with structures that can be built by using sustainable local materials and the engagement of the community in the construction process.

The new construction system follows a sustainable solution in order to build urgently and lasting shelters. According to Pelosi Building Peace, the construction life span is 12 years, which almost quadruple the age of a typical caravan shelter in refugee camps. The construction system is easy to build, assemble, and disassemble, using available natural resources, forming temporary structures that can be removed and recycled after refugees turn back to their country. Therefore, the structure system can be a solution to build urgent and low-cost shelters with high efficiency in other refugee camps with similar circumstances to the Al Zaatari Camp.

The contribution of women to the process is very important to enhance their position in society. As a matter of fact, the engagement of refugees in the construction process is a key aspect of the project, as it will strengthen their attachment and sense of belonging to this new environment. In the same order, the social engagement of locals and refugees together strengthens their interrelationships and improves their socio-economic life aspect by providing them with professional skills. “this is not just a structure; it’s about creating jobs and transferring know-how to the local community,” adds Luca Drigani the humanitarian architect(Chlo Vadol 2015).

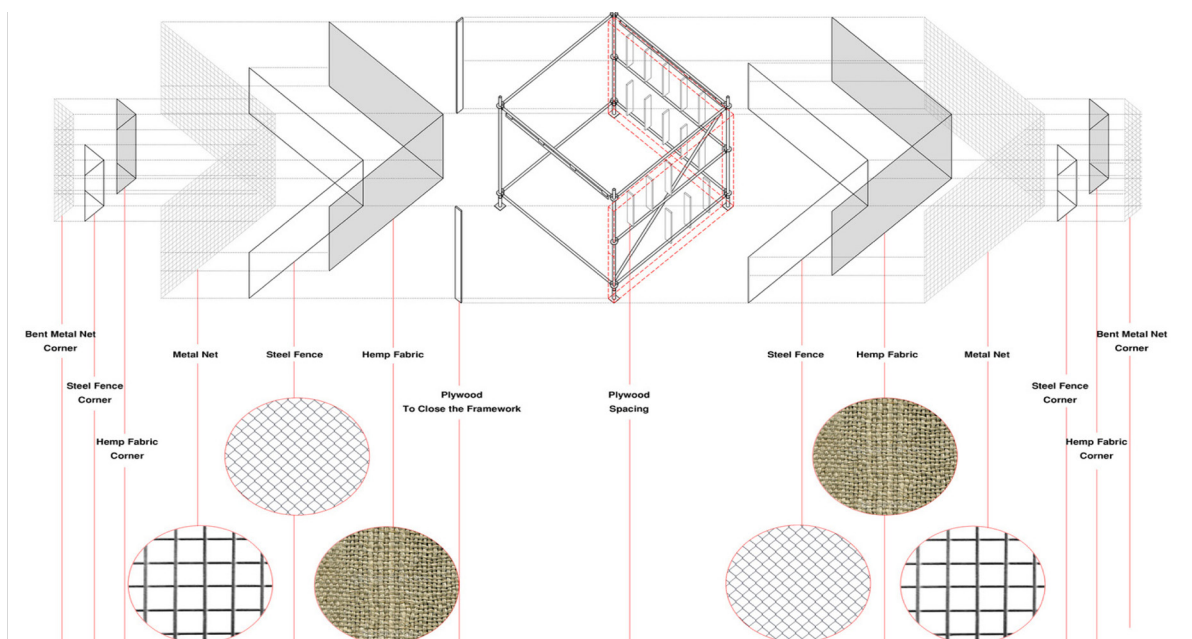


Fig. 59. The new construction system of the school. Source: Pilosio Building Peace.

Multi-purpose:

The project configuration allows secure, transitional, functional spaces in refugee camps, especially children's learning, and growing spaces.

The contexts:

The concept of the structural system is adaptable to different contexts and can serve the communities' needs, available in the contexts that allow earth construction.

Playground:

The courtyard of the school provides a playground and a space of social leisure activities for children.

Materials and social-technical aspect:

The materials are natural (gravel, sand, scaffolding tubes) and structural components are reusable.

The construction techniques are simple, economical and allow the contribution of refugees and locals, providing them with prior knowledge about the construction process and skills. Promotes integration among communities.

Transportable:

The structural element are recyclable and re-deployable, transportable and allows easy assembling, dismantle and long-term durability.

Jarahieh School

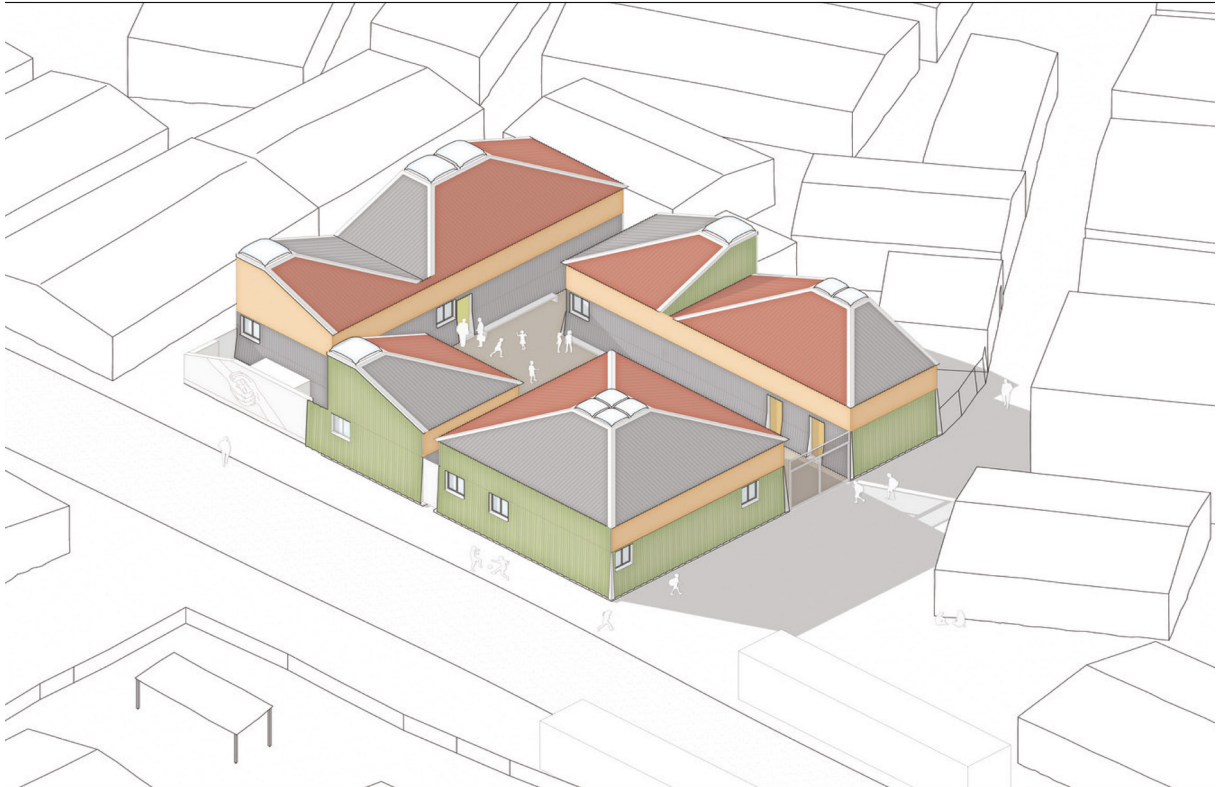


Fig. 60. Jarahieh building in Al-Marj camp between the tents, Lebanon. Source: CatalyticAction.



Fig. 61. Jarahieh plan in Al-Marj camp, Lebanon. Source: CatalyticAction

Introduction:

During the Syrian conflict, 1.8 million Syrian refugees forced to migrate to Lebanon, 50 percent are children according to the UNHCR, this number now represents almost one-third of the total Lebanese population. The new refugee population requires an increase in services and infrastructure, including educational facilities. However, with the inability of the Lebanese government to provide such services, mainly education, each of Jusoor²⁸ and Sawa²⁹ for development aid responded to the problem of the lack of educational facilities by building the Jarahieh school. This temporary tented school provides education to approximately 320 children, aged 5-14, per year. The school's original building was made of wood, covered by fabric, similar to the shelters provided by UNHCR.

Despite the accomplishment, the school of Jarahieh requires improvements in order to provide a proper educational environment. The 'tent school' has problems with illumination, temperature, and sound insulation, as well as lack of recreational space.

Save The Children Italy³⁰, donate the structure materials of the 2015 expo in Milan, to improve the existing Jarahieh school in collaboration with Catalyticaction. The construction was through a participatory design process between refugee children, NGOs, municipality members, teachers, and parents, using envisioning exercises and interviews to develop the school design.

The design:

Following a participatory design process, catalyticAction engaged the community, and its children, proposing exercises that allowed to incorporate children's, teachers' and parents' contributions onto the design process

The project design team offered particular training opportunities to Syrian youths living in the settlement, to enable them to learn new skills through specialist training in the construction site.

The project design considered the needs and desires of its beneficiaries by lowering running costs and extending the possible range of activities within the project spaces.

Material and structure:

28 **Jusoor** is an NGO of Syrian expatriates supporting the country's development and helping Syrian youth realize their potential through programs in the fields of education, career development, and global community engagement, according to Jusoor site: <https://jusoorsyria.com/>.

29 **Sawa** Originally named Sawa4Syria, is a not-for-profit organization founded as a reaction to the dire gap in fulfilling the needs of Syrian refugees in Lebanon. ("Catalyticaction" 2015).

30 **Save The Children Italy** was established in the United Kingdom in 1919 to improve the lives of children through better education, health care, and economic opportunities, as well as providing emergency aid in natural disasters, war, and other conflicts. ("Catalyticaction" 2015).



Building the school by communities workers and international experts.

Fig. 64. Photos of Jarahieh school. Source: CatalyticAction.



Fig. 62. Jarahieh school structure and configuration. Source: CatalyticAction.

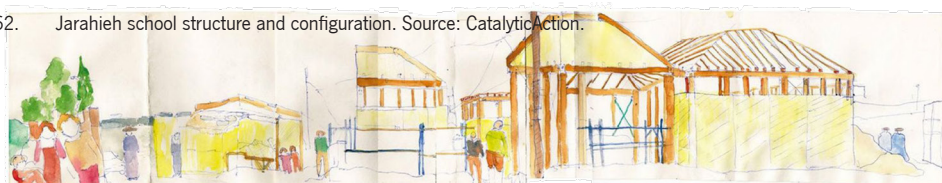
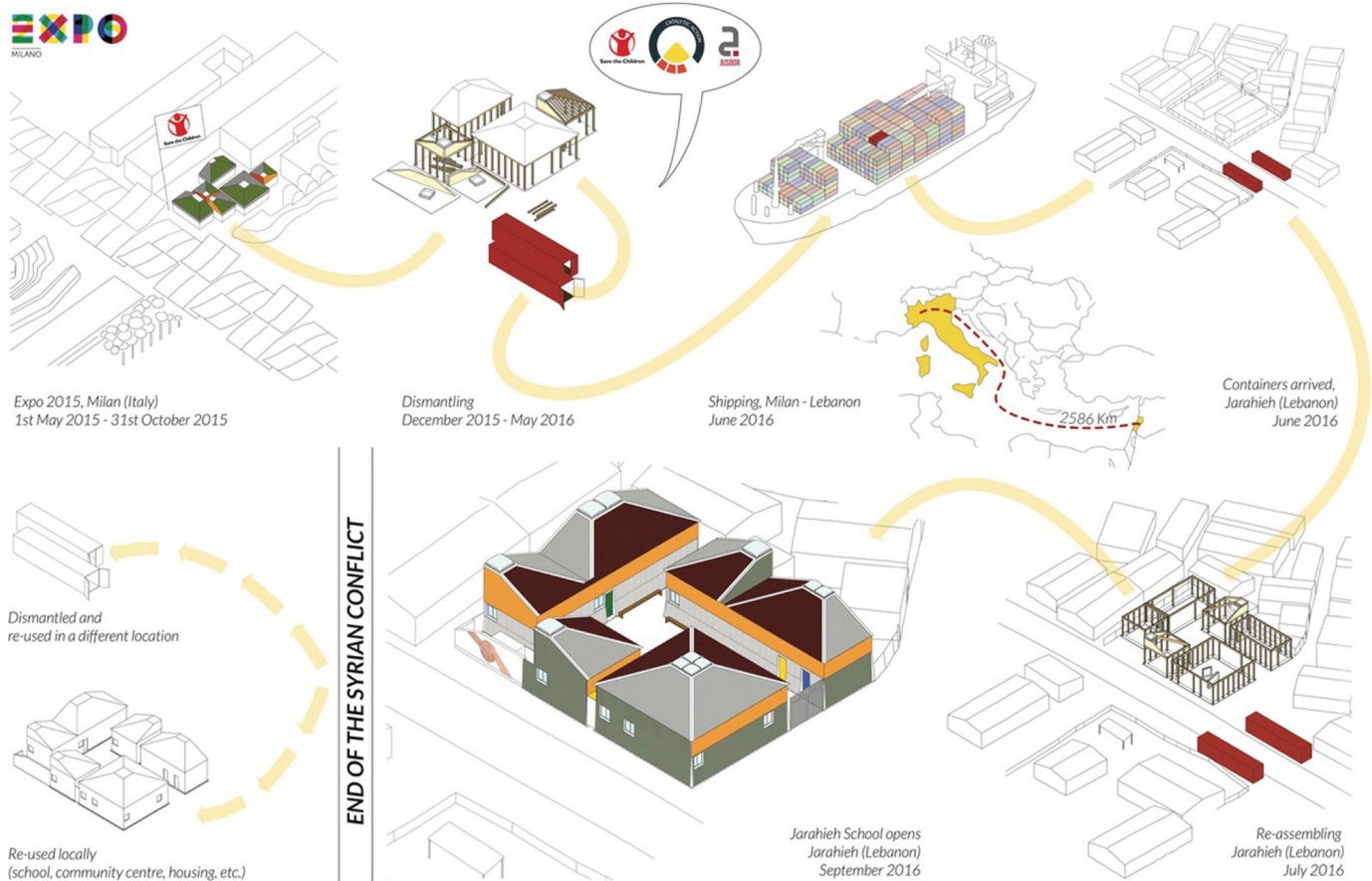


Fig. 63. Exercise drawings down by camp children and the design team. Source: CatalyticAction.

Fig. 65. The Milan expo structure the donated structure of the school. Source: Save children Italy.

Building cycle



A building of 714 sheep

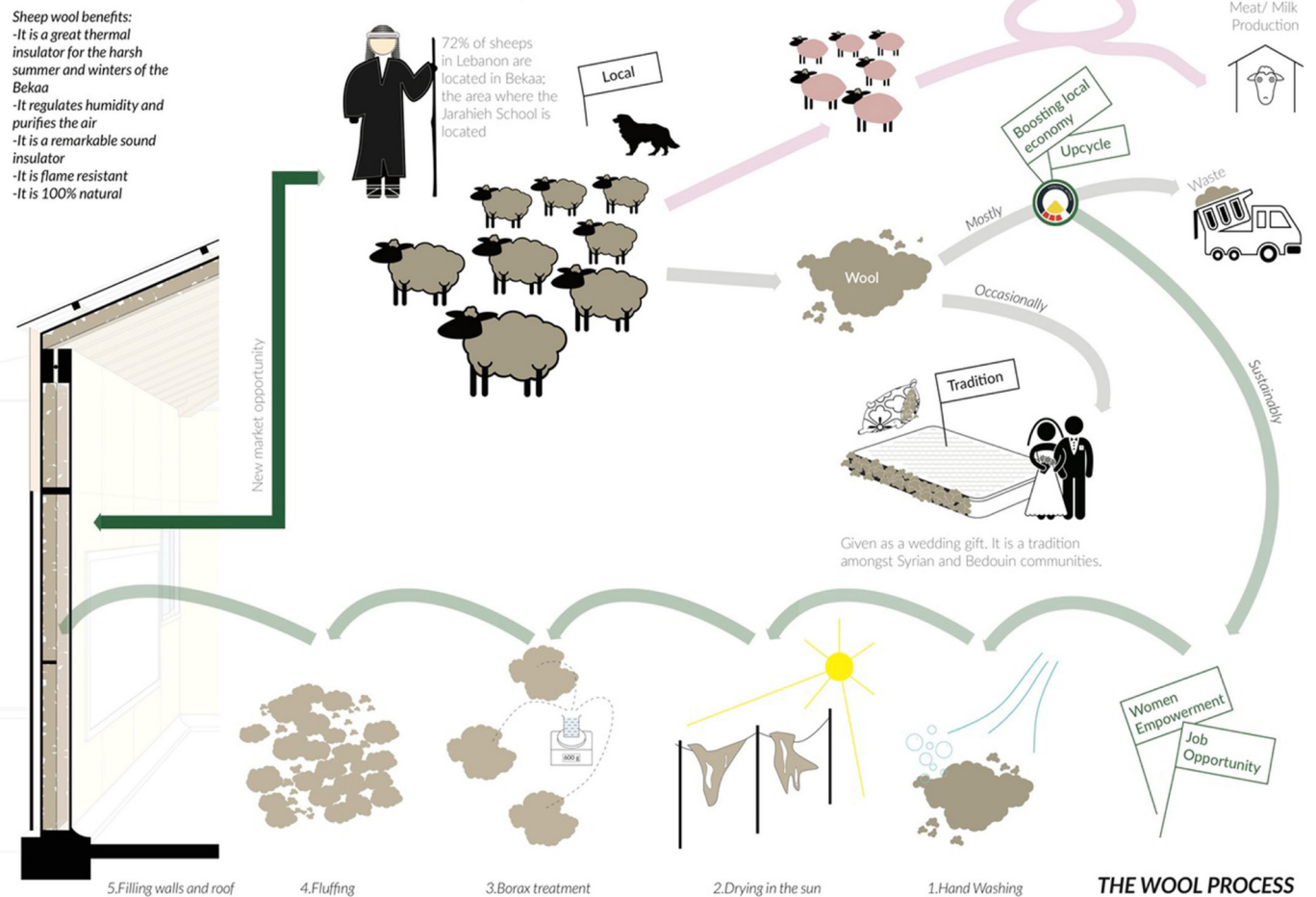


Fig. 66. The cycles of the project's construction process. Source: CatalyticAction. 95

The applied materials were a donation from the organization Save The Children Italy, ARUP International³¹ provided free engineering services.

The structure is made mainly of wood and having as thermal and acoustic insulation material natural wool, locally sourced and prepared by women from the settlement.

Form and function:

The new building was constructed by making modifications to the old design, transforming it into a series of enclosed spaces as classrooms around a principal patio as a playground. The new Jarahieh school is a school formed upon the imagination of the children by allowing them to form their school through helping in developing the conceptual design. The design of the new classrooms provides bright, naturally, illumination interior spaces with a playground and social activities space. Forming a playful, stimulating environment for youth who are forced to endure life in the harsh conditions of the refugee camp. The school is serving also as a place for adults to learn foreign languages out of children's school time.

Socio-economic profile of the project:

The project was built by a collaboration between different NGOs to ensure educational and social support for the community. The construction started in summer of 2016, and its team engaged workers from the refugee settlement and the surrounding Lebanese towns providing social and economic benefits to both communities. For instance, local farmers' engagement in cleaning and preparing the insulation material (natural wool) contributes to the local economy. The labouring process between Syrians and Lebanese workers enabled the professional team to build close relationships with them, facilitating the construction process.

Conclusion:

"The Jarahieh school is very important for the settlement in general and the children in particular.

It is the only educational centre within this settlement. The new school space represents a safe environment, a place where the children can develop confidence and healthy development". Said Joana Dabaj, principal coordinator of CatalyticAction, during an interview at Resite, 2016.

The project aimed to recreate the educational environment by reconstruction of the Jarahieh

³¹ **ARUP** is a multinational professional services firm headquartered in London which provides engineering, design, planning, project management and consulting services for all aspects of the built environment. <https://www.arup.com/>

school in order to serve the children of the settlement and their family at the first stage. Yet, this project has a dual objective, which is to create an educational space that serves both adults and children. Creating an adequate, stimulating, and stable learning environment is essential for supporting and promoting positive childhood development for refugee children.

The school has become a lifeline for the people in the settlement. It serves as a hub for community and school for children, a social space where people from different cultures and backgrounds can meet and exchange knowledge and experiences, besides creating a recreational area in the settlement using the playground of the school. The school's double objective will assist community cohesion among the Syrian refugee camp and the Lebanese society. The school forms a shelter inside a shelter because it is relatively safe compared to other shelters, in cases of natural disasters due to the durability of the structure and materials.

"The school has been constructed by local labour, all of the women and men who worked on this project live in this settlement, many of their children attend this school. It has been communicated how important it was for them to be part of this project, to work along with local and international architects, learn new skills and build a school for their children," said Joana Dabaj, 2016. In the process of construction, the social engagement aroused important issues such as gender equality, emphasizing the important role of women through their participation in the construction process, youth empowerment, through teaching refugee youth new skills and specialized training.

Multi-purpose:

The spatial organization of the space is flexible and multifunctional. Designed to be used by various age, societal groups.

The contexts:

Due to the characteristic of the school form and the materials used in school construction, the project can be adapted to different camps and shelters context.

Playground:

The courtyard of the school provides space for social activities.

Materials and social-technical**aspect:**

The materials (wood and metal sheet, natural wool. etc.) and structural components are reusable and built with the corporation of the locals and refugees.

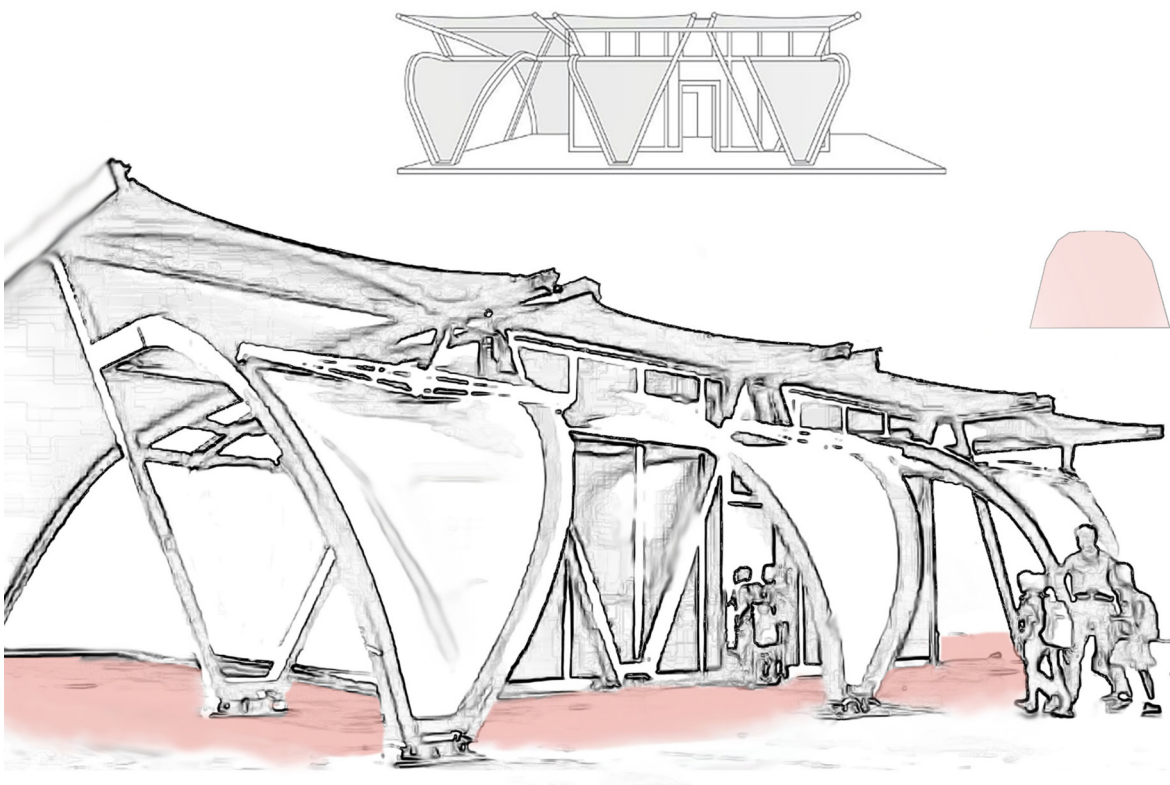
Transportable:

The components of the structure are reusable and easy to install and transport and ensure long term durability.

The EAA/ ZHA classroom prototype



Fig. 67. Children in front of their new classroom in a Syrian refugee camp. Source: Education above all Foundation.



The EAA/ZHA Classroom prototype.(EAA/ZHA)

Fig. 68. Illustration of the configuration of the new portable classroom prototype. Source: drawing by G.H.

The EAA/ ZHA classroom prototype

Location: 12 countries worldwide.

Introduction:

Most of the schools in refugee camps were constructed using caravans or fabric tents due to the lack of resources. To address this problem, Zaha Hadid Architects (ZHA), along with Education Above All foundation (EAA), adopted an approach proposing customized solutions concentrated on education and the support of the social and emotional well-being of children and their communities.

The classroom prototype was developed in partnership between education above all (EAA) and Zaha Hadid Architects (ZHA) and produced by the Supreme Committee for Delivery & Legacy³² (SC). The supreme committee has committed to funding a minimum of 100 structures and selected this project to be a part of the 2022 world cup sustainability legacy, promoting the achievement of the UN'S sustainable development goals (SDG). SC will finance the fabrication and construction of new structures that will be used during the 2022 world cup, and later will be transported into another country to be used as classrooms and educational facilities.

The design:

“our approach was based on the objective of creating spaces that offer customized and transformative solutions focused on education and the support of students and communities’ social and emotional well-being,” Charles Walker, director, Zaha Hadid Architects 2019.

The project develops classrooms with an innovative design following these standards: feasibility, constructability, modularity, flexibility, and transformability based upon multifunctional solutions, promoting economic, social, and educational investment.

The mobile classroom structure is planned to be deployed after The 2022 World Cup in the following countries: Cambodia, Cameroon, Colombia, Jordan, Lebanon, Mali, Myanmar, Palestine, South Sudan, Sri Lanka, Turkey, and Uganda.

A prototype classroom was built at the 2019 Wise Summit, on the 21st of November, in Doha, Qatar. Its construction took four days, and it was used for some of the summit sessions and workshops. After the summit, the classroom will be moved and built-in Mali, where it will help the educational needs of two local communities.

³² **The Supreme Committee for Delivery & Legacy (SC)** is an advanced in the planning of host country operations for the FIFA World Cup Qatar 2022™.

Material and structure:

The structure is designed to be easy assembling and dismantling. The characteristics of the used materials increase the classrooms' thermal performance by addressing fabric quality, ventilation possibilities, and adequate lighting conditions.

Almost all the elements of the project are custom designed for the project. A particular laser cutting machine was created to make the structural components such as the holes within the steel, a specific joint, and nails to use all over the structure to provide it with the stability it needs and allows it to be flexible to defeat the winds. Unlike the previous study cases, the process of building this facility requires special equipment and expertise.

Structures details according to EAA-ZHA:

The roof membrane:

"The roof membrane is a PVC/PES blackout that will avoid direct sunlight to penetrate inside the classrooms. This membrane is transparent, it is a customized product that allows a high sunlight illumination transmission providing diffused lighting and UV light filtering capability with high structural tensile load-bearing capacity".

The aluminium structure:

"The aluminium profiles are unique and are used for the structural load-bearing components are custom-engineered profile for use of this system solution only and it is made of aluminium copper and brass alloys. These alloys enable the compound to be bendable after the extrusion and provides extraordinary hardness after tempering application, with the help of tempering the formed of the bent structure are locked in shape and has enough structural hardness for connections".

The sidewall membrane:

"The sidewall membrane has less light translucent properties with high tensile structure stability that provides sunlight which allow additional lighting for the classrooms as whole".

The aluminium polycarbonate façade:

"The modular aluminium structure of the facades enables easy installation and dismantling and by using the polycarbonate panels while enabling high lights transmissions it also provides transparent view and privacy inside classrooms by not allowing a total vision transparency and with light weight double glazing properties it is easy to carry and has heating insulation capability."

The anchoring elements and custom-designed connections:

“Is a laser-cut steel plate providing enough strength to cope with the stoical load transferring of joints by using special joint elements that are designed particularly for the aluminium structure profile”.

Form and function:

Each classroom is a module and can receive up to 45 students. The structure system is optimized for flat-pack logistic demands, and it is characterized as being sustainable, reusable, flexible, affordable, and multi-functional, unlike the typical refugee tents.

This module has a long-life span and is visually appealing; the form of the classroom provides air circulation and controlled natural light projection making the interior environment a pleasant educational environment. Yet, the classroom layout is an open plan that allows it to be polyvalence space and be adopted by the community members to serve their different needs out of school time.

Socio-economic profile of the project:

The classroom design is concentrated on education and the support of children and their communities' social and emotional well-being. The module was envisioned as a multifunctional classroom with a well-designed form and warm environment, a space with airy attraction for students to gather, learn, and explore. The classroom design has a social aspect as it will be used as a focal point and community centre for refugees within the camp which will provide them with a suitable place where they can socialize and communicate, exchange experiences and knowledge.

Conclusion:

The project is unique and was born out of the desire to confront one of the most under-serviced problems in the world: quality education for out of school children. The main concept is to build sustainable, flexible, and affordable classroom structures that can be both multi-functional and visually appealing, according to the EAA/ZHA.

The classrooms' structures are durable and sustainable for several purposes. The Qatar 2022 World Cup Supreme Committee partnered to construct and utilize the classrooms' structures during The World Cup2022 and post the world cup; these structures will be dismantled, transported, and turned into classrooms to support and help out of school children around the world. Therefore, when the conflicts are done, and those countries reached the peace state, the structures can be used for other purposes. Hence, the project is capable of serving people in different situations, war, and peace.



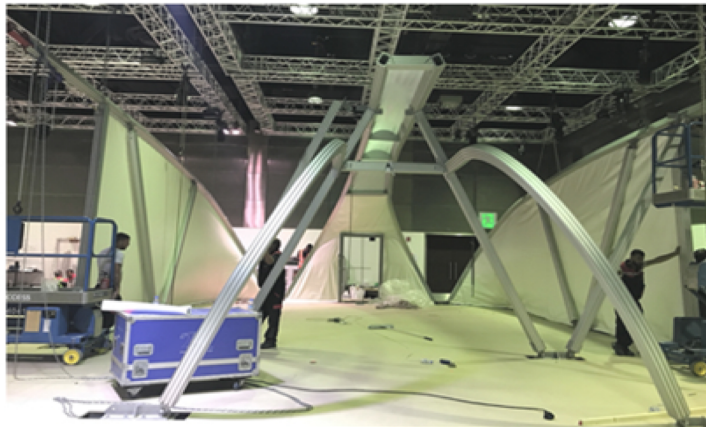
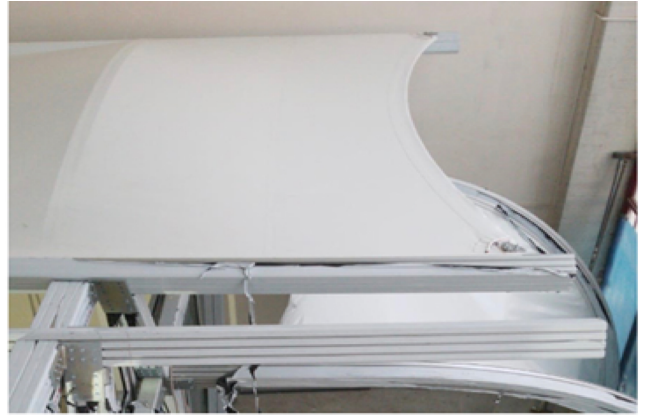
Fig. 69. The first classroom built for refugee children and implemented with classroom furniture. Source: the introductory video of the Project on youtube.



Fig. 70. The new classroom prototype during the WISE summit 2019 in Doha, Qatar. Source: Education above all Foundation.



The roof membrane.



The aluminium structure during the construction process.



Connections



The anchoring elements and custom-designed

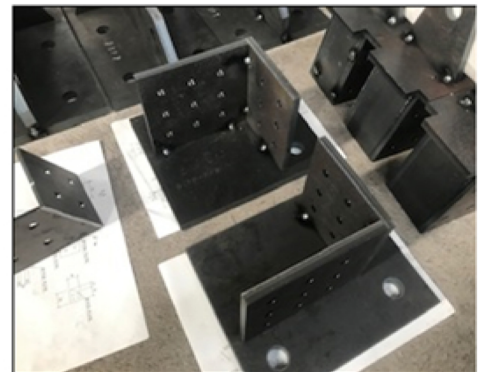


Fig. 71. The project structure and specific construction components. Source: Education above all foundation.

The multiuse of the classroom proves its efficiency bringing along social and educational aspects. The design was created mainly as a classroom for refugees, moreover, a multifunctional space for their community. A classroom that is forming a perfect social, intercultural space for gathering and exchanging life experiences and journeys, which in turn can enhance the community's social and humanitarian interrelationships' members and strengthen its social cohesion and resilience.

Multi-purpose:

The spatial configuration of the space has the quality to serve various functions.

The contexts:

Proper for all contexts, as its materials are transportable and have installation characteristics.

Materials and social-technical**Playground:**

The surrounded shaded exterior classroom space, No specific playground.

aspect:

The materials are prefabricated and cut by laser machine (Aluminum, Polycarbonate, anchoring elements, steel plate), it requires special equipment and expertise.

Transportable:

All the structural elements are prefabricated, easy to assemble, install and dismantle and deploy.

Maidan Tent



Fig. 72. The Maidan Tent. Source: Maidan Tent Project's page. <https://www.maidantent.org>.



Fig. 73. Maidan Tent site Map in Ritsona refugee camp, Greece. Source: Google earth.

Emergency action is needed to be taken at times of conflict and to serve those who aggrieved, people concerned architecture as a luxury. However, architecture can be an instrument to help solve the problem, bringing back unique and symbolic conditions of life to those who lost it. The previous case studies use architecture to tackle the problem of lack of socio-educational spaces inside the refugee camps, aiming to improve the refugee's conditions, unlike the copy-paste typology that is usually used to build a refugee camp.

Yet, there are a few projects that focused on the problem of lack of social and common public structures in refugee camps. The absence of such structures has punitive impacts on the psychosocial health of the individuals, and their presence enhances their psychosocial development and living conditions of refugees in refugee camps, such as the 'Maidan tent' project. Fig.79

Maidan Tent

Maidan Tent

Location: Greece.

Introduction:

"We are proposing the Maidan Tent, a covered public space designed to host all kinds of activities into a refugee camp" (The design teams, 2016)

As a response to the humanitarian crisis of refugees around the world, many architects and designers are devoting their talents and energy to enhancing the living conditions of the refugees. Maidan Tent is a proposal of humanitarian architecture, intending to provide a social hub that can host up to 100 people. It was constructed in the Ritsona refugee camp, Greece by two architects Bonaventura Visconti Di Modrone and Leo Bettini Oberkalmsteiner, with the support of The UN International Organization for Migration.

The word 'Maidan' is derived from the Arabic for 'square.' in the Arabic culture, "madian" is a public space that existed in the cities from where the refugees come from and are used by people for gathering and interactive in which reflecting the social purpose of this project. The tent is a social space that will allow the refugees to profit from semi-private public space within the camp. Moreover, the madian tent works as a common area to counteract the psychological trauma induced by war, persecution, and forced migration.

The design:

The process of constructing Maidan tent started in 2016. The designing team visited the camp eight times, and had meetings with refugees, in order to understand their problems and needs. The team identified a psychological ‘migration trauma’ within the community, consequent to migration and asylum journeys. The randomly building environment of the refugee camp and the sprawling arrangement of tents and containers led to a lack of common areas that generate social isolation and disorientation. The architects believe that this common space will provide a multi-use environment to play, interact, and empathize under a moveable, sheltered, expressive structure.

Material and structure:

‘Maidan Tent’ comprises an area of 200 square meters, This tent is erected above a colourful platform painted by the Spanish collective art group BOAMISTURA³³. The structure of the tent is 16-meter in diameter and was built using aluminium and steel, providing a rigid structure with fabric canopy (inflated in only 5 minutes), resistance to water, wind, fire-resistant textile. The tent is a flexible structure, with standardized components allowing for simple installation and maintenance and easy to assemble and dissemble, a mobile construction that can be moved to reuse in other camps.

Form and function:

The tent has a circular form, chosen to be a conscious attempt to invite and attract people to enter inside from any direction. “We chose this shape especially because it’s different from a conventional tent” says Bonaventura Visconti Di Modrone (2016) “our goal is to create a public common space, not a big house, the shape has to be appropriate to respond to psychological needs, as well as procedural ones” says Bonaventura Visconti Di Modrone (2016).

The shelter is able to organize eight inner spaces, which can be adapted for a range of uses. These eight spaces are sequences of semi-public areas that enable refugees to establish personal relationships and exchange knowledge and interact.

“We believe that it is important to help the refugees to keep their identity alive, to remind who they are and where they come from” BOAMISTURA, since the majority of the refugees in Ritsona camp are Syrian-Kurdish And Iraqi-Kurdish, the platform was painted by the Spanish collective art group, inspired by “Girish: characteristic geometric shapes from the Islamic art”.

33 **BOAMISTURA** Spanish Art Collective is a multidisciplinary team with roots in graffiti art. it was founded in 2001.

Socio-economic profile of the project:

The tent represents a multifunctional space. A medical and psychological centre, a playground for children, a gathering place to eat, buy and sell goods, learn and teach, pray, discuss, and exchange ideas. The project can allow temporary respite for refugees and providing an integrated, interactive, intercultural environment. It spotlights the lack of common/public spaces inside the refugee camps generally and promoting the need to rethink those camps. There are psychological motivations to understand that common space is a priority requirement in the refugee camps because such spaces providing them with infrastructures that rebuild and brought their identity in that foreign environment, which will help them to recoup the sense of belonging to this new country, rather than the thinking of just building housing, health, and educational facilities.

Conclusion:

“Them, us – all of us are migrants. That’s why living conditions need to be flexible and fluid” says the architect Bonaventura Visconti Di Modrone, 2016

In this project, the architect understands the psyche of the refugee and applied the architectural object, which is the project as a healing tool for the wounds and traumas of refugees. The “inflatable cloud,” as the refugees from the Ritsona camp call it, has a central position as a public square of an urban settlement working as a social and interactive space since it hosts sharing and socializing activities such as public cinema, celebrations economic activities such as fruit and vegetable market. “it can be a space where people receive medical and psychological care, it can be a playground, a place where people eat together, buy and sell goods, learn and teach, pray, convene, interact and exchange ideas” says Bonaventura Visconti Di Modrone 2016. This tent is an example of what intercultural space can be, where people from different backgrounds, races, religions, and nationalities can gather and exchange life journeys, knowledge, and skills. The project can serve as a great nonformal educational environment for adults and children.



A part of the camp landscape



Children playground



Children help to paint the concrete platform with the BOAMISTURA group.



Illustration of the tent if it was transported to other refugee camps, Al Zaatari camp Jordan.



Focal point for the community.



Fig. 74. The Maidan tent configuration and different use. Source: Maidan Tent Project's page. <https://www.maidantent.org>.

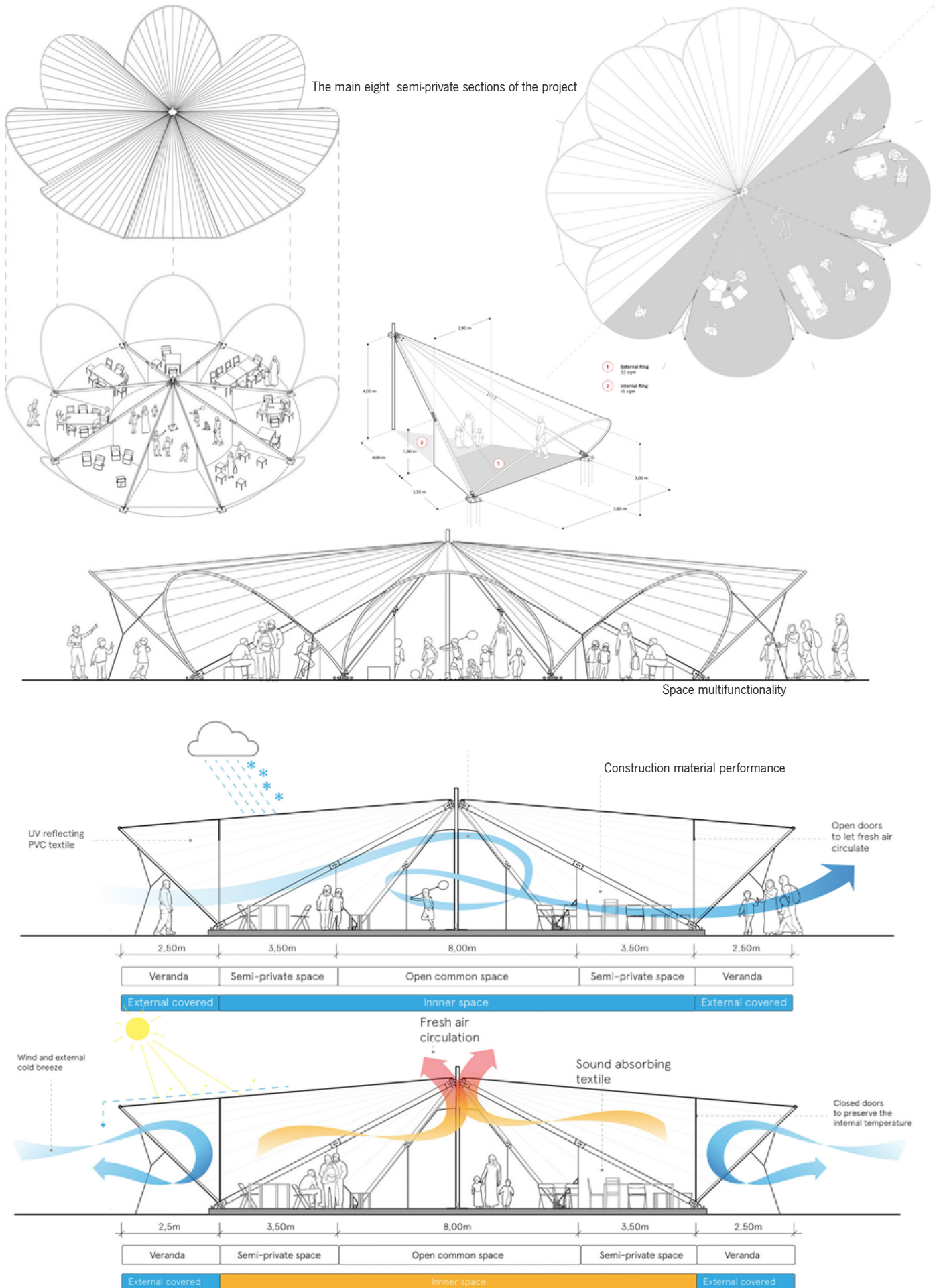


Fig. 75. Architecture drawings of the project. Source: Maidan Tent Project's page.<https://www.maidantent.org>.

Multi-purpose:

The spatial configuration has the quality to host a variety of different activities.

The contexts:

Proper for all contexts, as its materials are transportable and have insulation characteristics.

Playground:

The spatial characteristics of the space and its semi-private sections, allow it to be multi-functional space a playground for children and social space for the entire community as well.

Materials and social-technical**aspect:**

The materials are (aluminum, Pe + Pes cover textile, steel), and is require special equipment and expertise to be installed.

Transportable:

All the applied materials are easy to transport and install, ensuring long term durability.

Conclusion

Concludingly to this chapter, the architectural object is one of the main actors in support of the healing process for those who were traumatized by catastrophes and displacement and moreover; it aims to strengthen the resilience and cohesion of communities. In the previous study cases, architecture faces the problem of the lack of educational, social infrastructures inside the refugee camps, proposing particular approaches and solutions by designing educational environments with a dual objective (educational, social). The previously analysed schools serve refugees, children, and youth learning and development and benefit their community by providing social and common culture spaces. These projects worked on providing refugees with new professional skills, knowledge, and exchange life experiences and helping them to build social and emotional bonds with each other and with this new community and place.

Accordingly, the previous analytical approach to these projects evidences particular educational models that contribute to healthier social and educational contexts that can embrace all segments of society, and indemnify the absent life structures.

These models can be considered as spaces of exception that contribute to the refugees' development and growth, enhancing their psychosocial life and well-being, providing them with the sense of hope, sense of continuity, to help them to start a new life out of the borders of the camp in the future.

The five studied schools have broken the stereotype of the school inside refugee camps since they are often built using tents or prefab caravans'.

The study cases presented new extraordinary approaches, for instance, the project 'EAA/ZHA', and '100c Al Zaatari', propose the entire school as one unite 'classroom' but the project the 'Re: Build' proposed the school as a group of classrooms with a particular playground. However, 'Jarahieh school' and '100c Azraq' proposed the school with more elements of administrative and services. The 'Maidan Tent' project has given a new conceptual approach to a multifunctional, semi-private, collective, social space for people inside the refugee camps.

Despite the differences in the spatial configuration and the architectural components and materials between the cases of study, some projects such as 100c Al Zaatari, 100c Azraq, Jarahieh, Re: Build to use the construction process as a tool to enhance the social engagements and the integration between local and refugee communities and to promote new social notions.

The new approaches suggest a new notion to use the school spaces for social space. As such, the school serves as a common social space for different activities (educational, social, cultural, leisure,

regional) that serves both refugees and locals.

As the previous projects intersected in different aspects: architectural components, the principal purposes, and concepts, functions (educational, social), a particular set of criteria for the educational, social environment in the context refugee camps can be derived:

- Classroom
- Playground
- Social impacts and space
- Social notions.

Classroom:

As the projects are educational, the existence of a classroom is crucial. Each project draws and organizes this essential element very precisely and untraditionally according to each context's circumstances and the capabilities, which include the project's location, resources, materials, and people cultures, transforming the classroom into a very polyvalence, unique, suitable and particular environment. (polyvalence space).

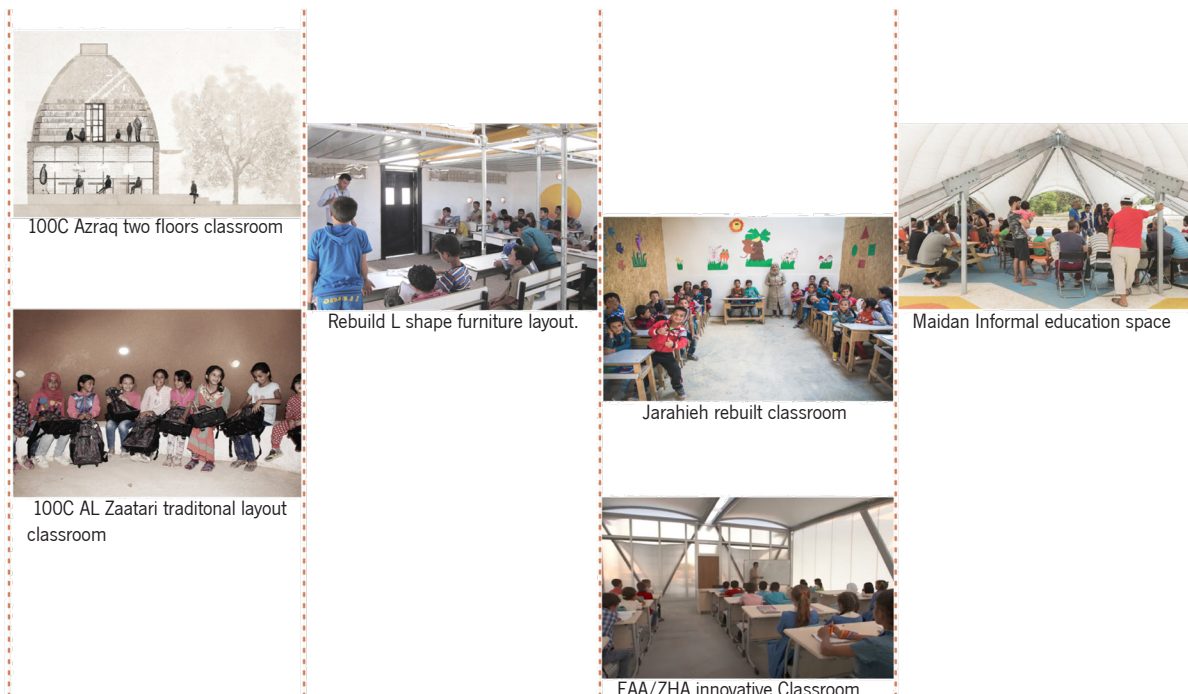


Fig. 76. The classroom of different projects. Source: G.H

Playground:

As the playground is the main leisure element in the school and it is the very first social environment for the child with partially supervised. The playground provides children with a particular spatial environment to play and build their social skills. Playground varies from one project to another, and it was either internal such in the case of 100C AL Zaatari or external such in the case of Jarahieh, re: build, 100C Azraq. The playground was used not only by children but by their parents furtherly as a space that allows multiple interpretations by being appropriated by different ways and activities, turning it to a standard and social space that varies according to each project design and spatial characteristics. (polyvalence space).



Fig. 77. Playground different perceptions according to each project. Source: G.H

Social impacts and space:

All the cases of study emphasize the importance of social aspect in the efficiency of each project and work on promoting social integration and cohesion by using either construction process and materials or the school spaces as the primary medium to achieve that.

Thus, some projects consider the construction process and its techniques as a contributor improving the integration between communities and their development by engaging members from both communities (locals, refugees) in the construction process, such as 100C AL Zaatari, 100C Azraq, Re:Build, Jarahieh.

Although all the projects provide people with a common social space where people can meet and interact, socialize, a space that responds to the socio-cultural requirements of both communities. In some projects, social engagement was promoted only by using the project's space as a community focal point, a common social area, such in the case of EAA/ZHA.



Fig. 78. The variety of schools construction techniques between traditional and new technologies impact the socio-economical aspect of the community. Source: G.H

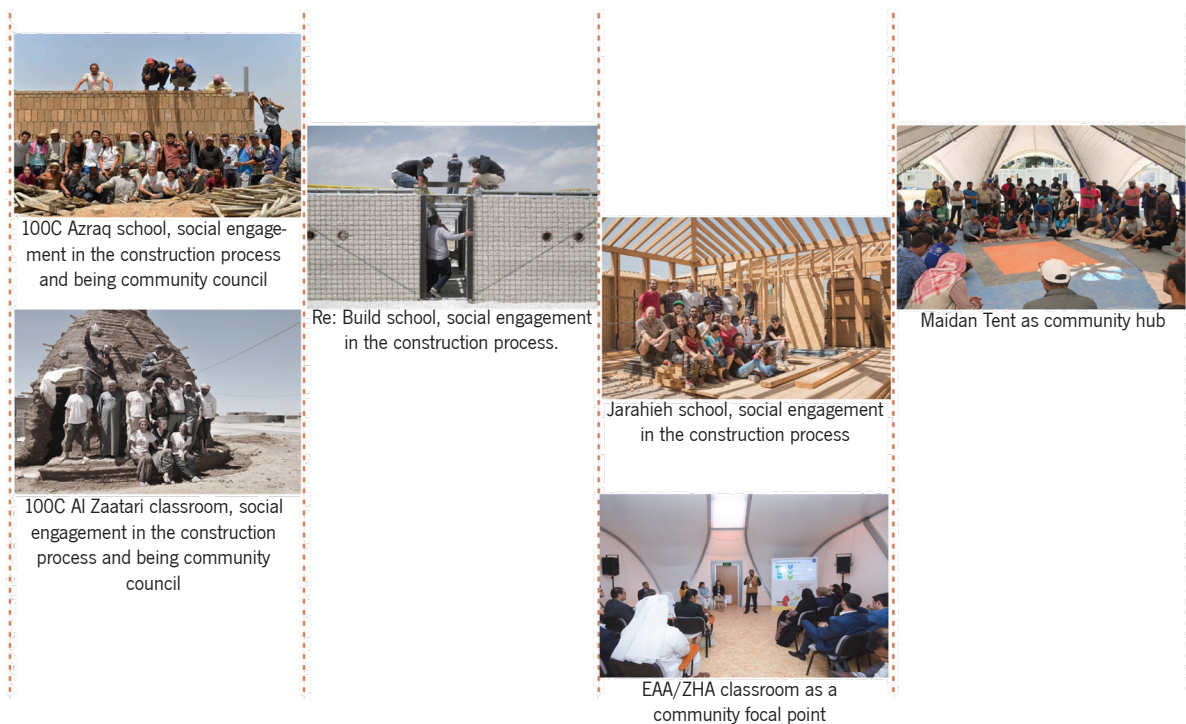


Fig. 79. Projects second main purpose as a social space for the community. Source: G.H.

Yet in the case of 100C AL Zaatari, 100C Azraq, the school location affects its efficiency as an Edu-Social space as the school was built outside the refugee camp in the hosting village, to emphasize on designing the school to be consolidated space for communities.

Social notions:

The projects aim to raise social awareness about some new notions such as the importance of quality education, gender equality, youth and women empowerment, sustainable construction methods. The notions were raised either through the construction processor according to the facility's potential uses.



Fig. 80. The common notions raised by the projects. Source: figures of the UN Sustainable Development Goals.

Finally, despite the differences in the design, configuration, and materials of each one of the projects, all of them are based upon the idea of designing an educational facility with a dual Edu-Social objective, by forming space of exception inside the camp which endeavouring the community's development and growth through the Edu-Social development of individuals. The projects intend to design the school to serves the community as a whole. Firstly, by being educational and pedagogical space (classrooms), recreational space (playground) for the children and youth. Secondly, by being a social, common space (community centre, community council), public space (playground as public square out of class time), a focal point for all community members.

Accordingly, when designing schools to be Edu-Social space, it will turn its space to a polyvalence, psychosocial space as well, and that by applying some changes to the school design, spatial component, and by the accurately choosing of the construction materials.

For example, in the case of 100c Al Zaatari, the project has a circle layout and fixed furniture, which allows it to serve both classroom and 'majlis' community council. In the case of EAA/ZHA, the project has a more open plan with no furniture, allowing it to be adopted by the community members according to their different needs' classrooms, community centres.

Thus, designing the school to be a polyvalence space will promote children and youth development and will enhance the socializing and peacefully coexisting. The building of the social-emotional bonds between locals and refugees strengthens community cohesion, which in turn will make the school being the exception in the camp. (space of exception).



Fig. 81. At the margins of life. Source: (George Butler 2013)

CHAPTER III | **School climate and the Edu-Social space**

School climate for schools in refugee camps

Classroom (spaces of development)

Playground and informal social nodes (Spaces of hope)

Construction techniques and materials

Conclusion

School climate for schools in refugee camps

During our initial and formative years, we spend half of our wakeful times in school: once learning is one of the most prolonged lifetime processes. In a broader sense, learning is the process in which a person obtains knowledge, skills, and experiences by responding knowingly to stimuli that might be encountered at daily life experiences and tasks, during work, and study, social interactions. (UNICEF division of Communication 2006).

Usually, when learning is mentioned, the first thing that comes to our mind is the spatial circumstance where it occurs, such as the classrooms and playground, as well as its relational dimension, including its two main actors: teachers and pupils. Accordingly, the learning process occurs in the presence of three major factors: pupils, educators, and the physical environment that embraces them.

Assuming that learning is a social, spatial and pedagogical system, it is conceivable to consider it substantially associated with three educational aspects:

- Cognitive education concerns literacy, vocational skills, numeracy, rote learning, independent learning, the arts, and health, moral knowledge, social traditions, and norms.
- Social education is about social and civic aspects, as well as beliefs and social values. It includes interrelation, social dispositions, the sense of belonging to a specific social group, according to its codes a habit, and self-reflection and empathy, personal responsibility, and moral decision making.
- Physical education is related to physical and social-emotional security and the connectedness to a certain place, a certain community, a certain group and the engagement into a community through physical structures and sense of locality.

Learning is not about only literacy and numeracy. It also signifies designing a comprehensive facility where teachers can teach, and children can learn. (darling-hammond et al. 2020). Accordingly, the learning environment should include features that serve the three educational aspects, in order to achieve the positive equilibrium of the pupils, promoting their development and attachment and identity to this environment, which in turn reflect on the psychosocial development and growth, allowing social cooperation and developing the sense of security and trust, belonging.

Children are influenced by whom they lived with, communicate, work, walk, study, play, and by the context where those activities occur. Refugee children were exposed to situations of terror, anxiety, and stress, they experienced physical and psychological trauma during the conflict and displacement, schools are places that promote children's self-development thriving them to recover the sense of normalcy by encouraging their healthy and social interrelationships between them and with children of the host community.

As mentioned earlier refugee camps lack of social and educational structures, 'life structure', generates

social gaps among refugees as well as between them and locals' communities. In this sequence, and as mentioned in the elected case study, camp's school are designed with a dual objective: edu-social recouping some of the lack of life structures.

Education is an integrated social system and is considered a critical factor for the development of societies. Therefore, in order to achieve the full potential of the educational process and attain the required balance for teachers, students, and community as a whole, it can't be detached from its physical support. In this order, refugee camp schools should pursue their maximum educational efficiency along with its social and cultural efficiency.

To materializing this ideal Edu-social environment, the school's efficiency is often measured by the effectiveness of its components in attaining the teaching/learning process in an integrated manner, that designers and planners call the "school climate"³⁴ in order to achieve a "the positive school climate"³⁵. (National School Climate Center 2009)

As such, school climate means "the quality and character of school life" (national school climate center n.d.). The concept is studied, aiming to reach maximum efficiency in the school environment in order to promote students' academic outcomes and social life. Thus, their academic and social development. However, school climate has several definitions, as it is a preventative approach and a predictor of school disorder, which negatively affects students' safety, development, and achievements, and linked to community school's social, pedagogical aspects in addition to school's size, and structure (Gottfredson et al. 2005).

H. Jerome Freiberg, in his book "School Climate Measuring, Improving and Sustaining Healthy Learning Environments"(2005), define school climate as "the heart and soul of the school that essence of a school that leads a child, a teacher, and an administrator to love the school and to look forward to being there each school day".

Accordingly, the school climate can be defined as our schooling experience, our feeling towards school, our social, emotional, and physical bonds to this place. Thus, it is our attachment with this place, where we feel safe/unsafe, engaged/disengaged socially, participating/ nonparticipating in the learning

34 **School climate** "refers to the quality and character of school life. School climate is based on patterns of students', parents' and school personnel's experience of school life and reflects norms, goals, values, interpersonal relationships, teaching and learning practices, and organizational structures"(National School Climate Center 2009).

35 **Positive school climate** is the product of a school's perception of promoting safety; and supportive academic, disciplinary, and physical environment in order to foster youth development and essential learning for a productive, contributing and satisfying life within society.

This climate includes:

- Norms, values and expectations that support people feeling socially, emotionally and physically safe.
- People are engaged and respected.
- Students, families and educators work together to develop, live and contribute to a shared school vision.
- Educators model and nurture attitudes that emphasize the benefits and satisfaction gained from learning.
- Each person contributes to the operations of the school and the care of the physical environment." (National School Climate Center 2009).

process, connected/ disconnected to the surrounded physical environment (school environment).

This schooling experience is affected by the principle dimensions of the school climate which can be assorted into four major dimensions according to the national school climate council³⁶ :

- Safety.
- Teaching and learning (academic climate).
- Interpersonal relationships (community climate).
- Institutional environment (physical climate).



Fig. 82. School climate and its dimensions. Source: (National School Climate Center 2009), edited by G.H..

However, the previously mentioned school climate and its dimensions were applied to schools in a state of peace, but during the state of war, displacement and asylum how can we think of school climate? What are its main dimensions, and for what should it aim for?

According to the analytical information on Chapters I and II, refugees in camps lack social and educational structures, which in turn affects their sense of safety and belonging. As such, those spaces gather a dual objective edu-social, being a multifaceted place that serves a wide range of uses from teaching-learning to everyday social activities attended by children and their families, which in turn strengthens the community coherence.

By this regard, the school climate in refugee camp must promote peace, development and knowledge for the entire community. Its dimensions must work together turning the school space into an Edu-socio space that can serve both refugee and local communities. In the light of the school climate in a state of peace, taking into account the aforementioned cases in Chapter II, the principal dimensions of school climate in a refugee camp can be derived as:

³⁶ **The National School Climate Centre** was founded in 1996 at Teachers College, Columbia University, in United States, It is a non-profit with more than two decades of experience working with schools, districts, and states nationwide to help the entire school community—administrators, staff, students, and parents, improve the climate for learning. The main goal is to promote safe, supportive learning environments that nurture social and emotional, civic, and academic growth for all students in schools. (National School Climate Center 2009).

- Safety.
- Development and education.
- Social inclusion and engagement.
- Community cohesion.

Consequently, although the school climate efficiency can be achieved through achieving a productive physical climate since the physical climate constitutes the physical environment in which the other three dimensions of school climate occur. Therefore, the physical climate should be designed to pursue an efficient physical learning environment. Hence, its dimensions can be sorted as following principle dimensions:

- Classroom (development and education).
- Playground and informal social nodes (community cohesion).
- Construction techniques and materials (social inclusion and engagement).

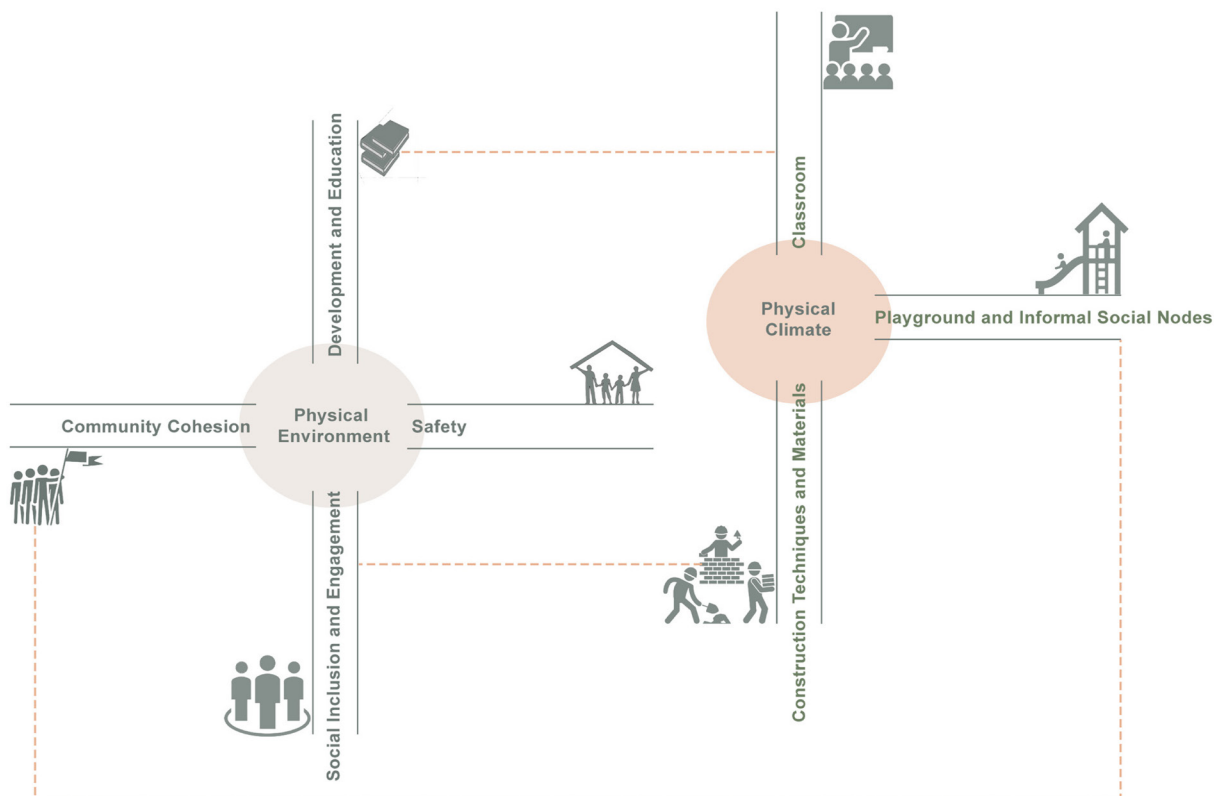


Fig. 83. School climate for refugee camp schools. Source: G.H.

For illustration, the physical climate frames the social, pedagogical, cognitive experiences of students through its principal dimensions. The learning process is considered an integral part of children's lives, and it occurs within a physical environment, which, by its principal components, ensures maximum efficiency in the learning process.

To conclude, camp's school should achieve maximum efficiency by creating stimulating environments considering its design, spatial arrangement, equipment, materials, and colours. Thus, through all the dimensions of the physical climate to consist of 'positive school climate,' the positive school climate for refugee camps' schools can be obtained not only through pedagogical stimuli (pedagogical strategies) but also from the design of its environment (physical climate).

Classroom (spaces of development)



Fig. 84. The safe haven. Source: G.H.

The classroom is the core of the school environment, determining the physical circumstances of the learning process (layout, spatial arrangement, colours, materials, illumination).

When thinking about a classroom, the mental image differs from one person to another. For instance, asking to a group of three persons A, B, C, what is the first thing that attains to your mind when mentioning “classroom”? Person A might say the blackboard, person B might say the studying desk, and person C might say drawings and posters on the wall according to each person’s learning spatial experience.

As in a refugee camp, classrooms are mainly tents or caravans. In order to improve this poor educational experience, architects of the presented case study worked to improve schooling experience by improving the classroom physical circumstances (for instance: space flexibility and layout, construction materials and furniture, as well as colour patterns and illumination).

The achieved architectural solutions improve spatial circumstances. The projects were divided by being either one unit (classroom) like EAA/ZHA school, 100C Al Zaatari school without a particular playground or a series of units (chain of classrooms) with playground like the Re: Build school, Jarahieh school or 100C Azraq school which is a group of units (classrooms) with different functions and a particular playground.

Space and its arrangement have a far-reaching influence on children’s development and behaviours. As humans, our behaviours are affected unconsciously by the surrounding physical and spatial elements which work as intentional or unintentional incentives. In the article, “Effects of Esthetic Surroundings” (1956), the authors stated that a group of people in an ‘ugly’ and disorganized space is less likely to communicate and interact than those who are surrounded with an organized clear space.

The ability of the students to be engaged in the learning process, social activities and interact with each other depends on the quality of the space that embraces them. In the article, The Soft Classroom (1980), authors suggest that renovated classrooms with fine furnishings and pleasant design increase student participation and performance. Therefore the spatial design and layout of the classroom space will impact students communication, interaction, and participation in the learning process (Lasswell and Managers 1985).

The impacts of the school’s built environment influence different life aspects of the school community: social, psychologic, congenial, pedagogical (Colbert 1997). The classroom is the core of the school environment, its design and layout influences both student and teacher self-spatial consciousness

and behaviours reflecting positively or negatively on the entire educational and development process. The design and layout of a classroom determine how communications and interactions among the school community will occur (teacher teaching and students learning).

The classroom arrangement provides the student with a specific physical spot for each one of them (study desk, chair, name labels, etc.), providing students with a compass within the school environment. This compass will increase students' attachment to this place and provide them with a sense of identity thus, generate in them the sense of belonging to space which in turn will urge their interaction with each other and with the teacher thus improve their participation in the learning process.

The classroom arrangement should work on attract students' attention and avoid their conflicts and distractions, the changing in it will impact negatively or positively students' and teachers' interrelationship and interaction (colbert 1997). For example, if the physical spot of each student changes randomly, their spatial awareness will change as well as the teacher perspective. A situation that can impede interactions between the teachers and the students and produce a sort of distraction from the learning process.

The learning process in a classroom of a refugee camp school is very restricted, affecting negatively the students' ability to learn and develop. It emphasizes the necessity to improve learning physical circumstances.

In the book, *The Learning Environment: An Instructional Strategy* (1982), the authors argue that there are two central classroom components which either increase or limit the space contribute to the educational process which is the architectural facility and the arranged environment.(catherine e. Loughlin and joseph h. Suina 1982):

The architectural facility (Action, Classroom) determines the classroom fundamental physical stimulus, to achieve the maximum efficiency of the learning process. By using the physical stimulus factors of the classroom (its layout and spatial arrangement, colours, illumination), teachers' and students' interrelationships are fostered.

The arranged environment (Reaction, Influenced Behaviours) is related to how the physical setting of the classroom influences the overall school community behaviours. Also, to understand their overall consequential behaviours, it demonstrates how the classroom physical stimulus factors influence teachers and students to use and rearrange the classroom space in serving their different requirements.

Since in refugee camp classroom is tent or caravan, physical stimulus is limited to a few factors.

Bearing this in mind, physical stimulus factors (action factors) should be understood and analysed.

Layout and spatial arrangement

Learning is not just a process of transfer of information either from the environment or by the teacher. It is an act of interaction between student, teacher and environment. We learn by being exposed to stimuli around us, processing information progressively. Learning is “the conscious process of filling but the subconscious process of absorption” Rabindranath Tagore³⁷ (Taneja, 1983).

In ancient India, learning was based upon exposing the students to the stimulating environment where the information must be absorbed by them not stuffed in their minds considering that the real learning can be acquired from a stimulating environment (Singh 2014). Consequently, the classroom designed must take into account physical stimulus to students motivating them to learn, develop, and provide them with the hope of a better future. Unfortunately, in refugee camps classrooms characterized by being diminutive size, inadequately with learning tools, poorly by their spatial quality, efficiency as a learning environment.



Fig. 85. Various layouts and arrangements of the classroom tent in refugee camps. Source: (Sarah Dryden-Peterson and Elizabeth Adelman 2016). Carl Court/Getty Images.

According to the Cambridge dictionary stimulation can be defined as “action or thing that causes someone or something to become more active or enthusiastic, or to develop or operate”. The physical stimulus of the classroom may inspire positively fostering the learning process, or, negatively, they can cause stress to students. Accordingly, the physical stimulus factors of the classroom can be described as the spatial settings and action that controls our reaction, our behaviours, performance, growth, withering within it. It's our reaction and influenced behaviours (arranged environment) to control the spatial arrangement in order to serve our needs in that particular surrounded (classroom).

In the case of refugee camps, the classroom is considered as stimulus shelter that provides students with opportunities to detached from the harshness of camp daily life. Therefore, in such context

³⁷ **Rabindranath Tagore Fras**, (7 May 1861- 7 August 1941) known by his pen name Bhanu Singha Thakur, and also known by his sobriquets Gurudev, Kabiguru, and Biswakabi, was a polymath, poet, musician, and artist from the Indian subcontinent.

classrooms must be designed as places that able to diminish pressure, providing a temporary respite away from stressors.

The stimulating factors in most of the classrooms outside the refugee camps usually are uncountable such as furniture, pedagogical resources, colours and ornamental colours, illuminations, chalkboard, shelves, easel walls labels, Etc. The combination of such elements helps our brain to control and acknowledge incentives enabling us to perform and relate.

Anjali Singh (2014), emphasized the importance of exposing students to a complex, rich, stimulating environment in order to engage them in the learning process. The student yearning to learn increases when the learning environment allows them to get knowledge through its physical components and social interaction. (singh 2014)

Yet, what stimulates us as individuals, encouraging or discouraging us, might be as simple as a blue sky with clouds, warm sunlight reflection on the wall, colours of shades, as well as our name labelled on that particular spatial spot allowing us to practice intellectual or physical activities.(singh 2014). For a refugee child that spatial spot on the floor with the plastic chair (table) inside the tent can motivate him/her to study, to learn, attract him/her to go to that place, make him/her happy, therefore, being stimulated positively.

“The mind of the child is always on the alert, restless and eager to receive first-hand knowledge from mother nature. Children should be surrounded by the things of nature which have their own educational value. Their minds should be allowed to stumble upon and surprised at everything that happens in today’s life” (Singh 2014)

The stimulating factors in the classrooms help students’ brains to think and acknowledge incentives enabling them to perform and relate and thrive. Accordingly, the classroom layout should be designed with spatial learning stimulating factors, in order to promote students learning experience, providing them with a high-quality classroom, rich with a wide range of motivators (stimulations).

Each one of the case studies was designed using different physical stimulus according to its particular circumstances.

The layout of the educational environment is crucial for the conduction of the learning process as it draws out a predictor symbolic message of how the learning process will occur, determining the social interaction for the school community through its spatial arrangement. Hence, the layout of the classroom for refugee children should promote the learning process and foster participation, interaction,

and skills acquisition for children. In addition to encourage refugees' children to reconstruct new social interrelationships with each other and with locals' children, reforming group confidently which will allow them to reform the sense of community.

The spatial arrangement of the classroom influence students' learning experience, in the book *Role Of The Physical Environment In The Creative Space Of The Architecture* (2016), the authors emphasized the importance of the well-designed environment for student learning, considering the flexibility of the classroom layout as one of the main features of the learning space.

For illustration, when changing the classroom desks' arrangement from rows to circulars arrangements the escalating or decreasing of students' dialogues will differ completely, the arrangement in rows is more effective for lectures and lessons that are not based upon interactions among its actors.

The circular arrangement allows students to see each other and teacher equally, promoting the sense of equality between them from one hand, and on the other hand, pedagogically it motivated them to practice higher-level critical thinking abilities and encourages meaningful learning experiences. Socially empowering students' self-esteem enable them to understand the importance of their role in the community, to express themselves, to raise their voice where it's mostly neglected, and to improve their self-esteem, those points are very critical for decrease the discrimination of refugees children in their community and in the host community.

Consequently, classroom efficiency is associated with the flexibility of its layout and physical arrangement. Considering the classroom furniture as the primary visible factor that will mostly define its spatial arrangement, it will affect and draw the image of how the classroom will be used.

For instance, in the project '100c Al Zaatar', the furniture is a part of the building itself, from one hand it is more economical and attached to the background of refugees and locals cultures, and on the other hand, although this furniture isn't rearrangeable, it allows spatial flexibility and multifunctionality of the space and that can be down by adding some cushions and a rug, the place will become a 'Majlis'³⁸ (community, polyvalence place). but when displaying cushions in order to determine a 'Home-base'³⁹ spots for children, and by adding a portable blackboard, the place becomes a classroom. Fig. 86. As the classroom layout allows the required flexibility despite that the furniture and spatial equipment are part of the configuration of the classroom-built structure. The type of study desks is a critical factor for student

38 **Majlis**, is an Arabic and Persian term meaning "council ", used to describe a place for various types of special gatherings among common interest groups be it administrative, social, or religious in countries with linguistic or cultural connections to Islamic countries.

39 **Home-base**, is a specific location where each student sits (desk, chair, cushion...) it can have various forms inside or outside the classroom, for example, it can be the locker where a student can leave his/her books, bags during the break time, or where students can do independent work, wait for the next class, it is the students' spatial spots through the school landscape. (Leifson 1951).

stimulation process, for example, the layout in this project can be used as a circle or horseshoe-shaped arrangement, according to the activity. If its learning is a class visual presentation, the horseshoe-shaped arrangement is ideal for it. If the class is a social activity for students or the classroom occupied by the community, in such cases faces must be visible and communication between people is required thus, the circle arrangement will serve these needs ideally. Fig. 87. The project layout and spatial furniture arrangement suggest a new sort of flexibility for the learning environment.



Fig. 86. First picture is a traditional majlis in from arabic culture, and the second picture illustrates the 'Majlis' influence on the classroom design, and the third illustrates the 'Home base', the classroom. Source: MAJLIS (maryam al-nasiri 2019), 100C AlZaatari EAHR.

In the project 100C Azraq, the classroom's furniture wasn't a part of the structure. The interior space is organized by the display of desks and chairs, permitting more flexibility for space and rearrange space layout. Fig 88.

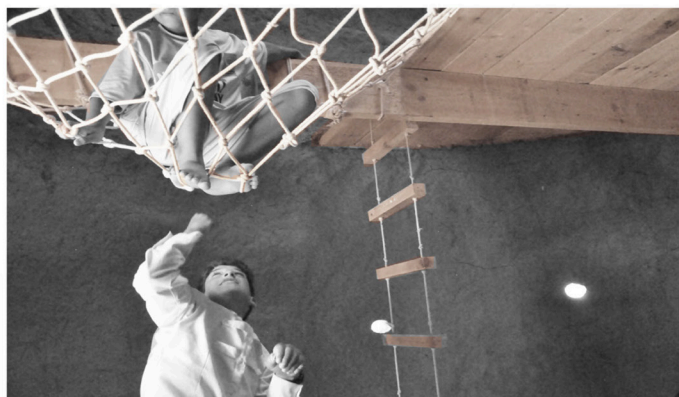
However, in the projects Jaraheia or EAA/ZHA or Re: Build the classroom space is polyvalence, as the projects have an open plan which enhances the flexibility of the spatial arrangement of the projects, allow for the use of various types of classroom furniture such as desks, chairs, tables. Etc, which strengthening the functionality of the space to be rearrangeable, and multifunctional benefits both the students and community members purposes. The classroom furniture and physical arrangement is related to students nurturing creativity and achievements and associated with students and teacher cooperation behavioural (Bagheri 2016), which is one of the main factors of the learning process. The influence of the classroom layout either promotes creativity and development or limits them. Fig. 89.

For instance, many researchers studied which furniture arrangement is more effective within the classroom, in the article *The impact Of School Environments* (2005), the authors suggested that if desks are arranged in rows, students will be more concentrate, stimulating more achievements than arranging those tables in a round arrangement, yet, in contrast in the book, *Designing Places For People* (1985), the authors suggested that rows arrangement is more for lectures and individual work, and it can promote a sense of separation and discrimination between the student in front and set behind.

In the previous studies, authors recommend a 'horseshoe' formation, where students can see each other faces and the teacher, as a better solution for classrooms.



Fig. 87. 100C ALZaatari school layout and its furniture as a part of the structure. Source: EAHR organization.



100 C AL Zaatari, The recreational equipment are part of the classroom layout, flexibility in using the classroom space for different purposes.

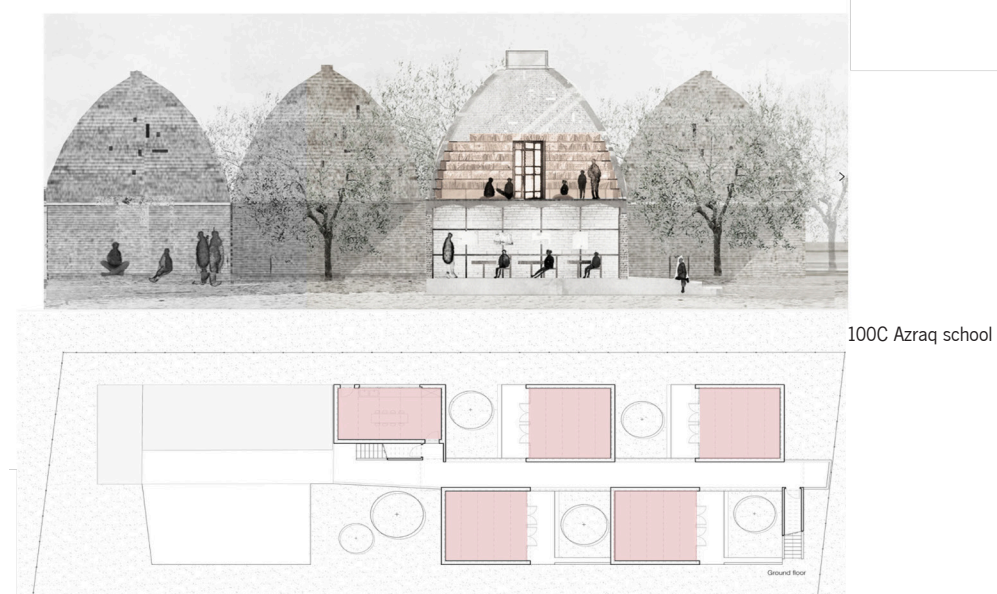


Fig. 88. 100C Azraq school not furnished layout allows for flexibility in using the space and choosing different kinds of furniture. Source: EAHR organization.



Rebuild, school L shaped desks arrangement.



Jarahieh school



Jarahieh desks in pairs rows arrangement.



EAA/ZHA desks in pairs rows arrangement.



EAA/ZHA, individual chairs arrangement for using the classroom as a conference room.

Thinking of refugee students, the horseshoe layout promotes the interaction among them and the teacher. On the other hand, this arrangement decreases the discrimination, traditionally evidenced through the row's layout, increasing the sense of equality between them. However, the approach of the classroom arrangement will also mainly depend on the pedagogical strategies applied along the learning process.

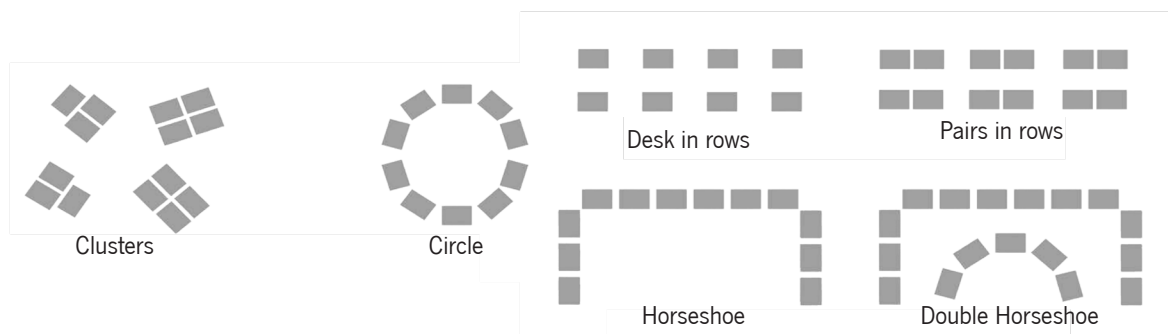


Fig. 90. Classroom furniture arrangements. Source: (Earp 2017).

Consequently, for schools in refugee camps its Edu-social purposes relay in the classroom space arrangement. The classroom layout and its spatial arrangement must encourage students to navigate and change the classroom settings according to their needs, requirements in order to stimulate their creativity and achievement and that is through its flexibility, and furniture type fixed or adjustable.

Colour

As humans, we have a biological and psychological reaction to colour. Colours are very effective stimuli (touch, hearing, and sight) during all stages of our lives, affecting our moods, mental efficiency, and energy levels (Higgins et al. 2005). They are critical components of the learning space. Camps' children are facing daily anxiety, life harshness, stress, a sort of absent of life "colour", thus, colour can contribute to a sense of wellbeing and reduce anxiety, stress and apprehension (Bagheri 2016).

In some project, colourful elements were added to break the brutalism of the construction materials, such as in Jarahieh school, where they paint the walls or allow children to draw on the cardboard separation wall, which make the classroom environment more pleasant for a child and allow them to develop a sense of belonging to this place. Fig. 91.

The classroom must be a child-friendly place, a place for creativity and achievements, the interior layout with its colours will attract and motivate students to learn and to be there. Colour is a stimulating factor, thus, it should be a principal factor in the classroom environment.

In the Jarahieh project, the architect calls for students' participation in the design process, allowing them to draw what school is like for them. In the Fig. 91, we can see that children drew their school using multiple colours.

In the book, *Planning And Designing Schools* (1998), the author stated that cool colors in the surrounded environments permit concentration for children's minds during class time, which can be projected on the projects of the EAA/ZHA and 100C AL Zaatari, Azraq. Fig. 91.

The colours of the material in EAA/ZHA project softens the interior environment impact on children due to its lighter cooler colours which stimulate children's concentration and attract them to be in the classroom and provide them with pure, pleasant, efficient of the classroom space. Fig. 91.

In *Re: Build*, the approach was more straightforward, where the interior classroom walls were painted with white paint, which makes make the class interior environment purer and brighter by drawing some colorful geometrical shapes. Fig. 91.

Colours and colourful spatial elements affect student internal spatial perception, their behaviours, and states of mind. The absence of colours can hinder the educational process and increase the inefficacy of the classroom physical environment which makes it uninviting and monotonous. Thus, in camp's schools, it is necessary, when designing the classroom, to regard the colour role in the classroom environment and not to neglect them, as colour consider a critical factor in the process of encouraging

and stimulating students in the learning process.

Despite the limited resources, by adding colourful elements or applying some changes to the design such as painting walls with neutral colour preserving different and powerful colours for the wall behind the teacher, student attendance will be attracted since powerful and brighter colours excite and attracted children minds widely. By maintaining the existence of the critical details such as colourful blackboard and furniture, paper clips on the wall. Etc. It Will contribute to the learning process, increase the efficiency of the classroom learning environment and reduce the negativity and stressor help refugees' children to see life colours and enhancing their psychological, mental health and their healing.



Jarahieh school allowing children to draw on the classroom's cardboard separation wall.



EAA/ZHA, the colors of the materials allow a pleasant environment for the children.



Jarahieh classroom adding colors by using the ornamental elements.



Re: Build, adding some geometrical colorful forms to attract students more to be in the classroom.



100C Azraq, the dependence on the soft colors of the construction material.



100C AL Zaatari, The dependence on the soft colors of the material. colors limited to the construction material colors.

Illumination

Light is a controlling factor in the mind's ability to concentrate and it can change mood, behaviour, and cognition, each kind of light has different impacts, yet the natural light is one of the best lightings that influences our mind, it gives us energy and stimulates secretes hormones in our brain influencing our levels of sleep (melatonin) or alertness (cortisol), working to reduce anxiety and stress levels, and improving students behaviour and perceptions(Uncapher 2016).

Students who learned in the classroom with brighter lighting particularly the natural lighting, have shown better performance and concentration than those who were in a classroom with dimly lighting (Bagheri 2016).

In camps, despite that schools or homes being "tents", they all have a sort of windows and opening. In the previous cases of study, architects try to use particular solutions for illumination.

In the case of Jarahieh, the old design suffers from poorly lighting. Fig. 93. During rebuilding the school the architects work on improving the lighting by adding skylight windows in addition to the sides walls windows which provide the classroom with daylight. Fig. 93. Since the school, in this case, suffers from the poorly electricity this would provide them with daylight in during the electricity outages.

In the other projects, the architects used the canonical approach creating an interior illumination system that is derived from the people's culture. Such in the case of 100C Azraq and 100C Al Zaatari schools, by using light voids 'Khanat' as it called in Arabic, as opening and lighting system derived from the traditional Syrian architecture. The system uses various openings by having a celestial opening at the top of the dome structure with several circles distributed all over the structure, allowing the light to flow to the interior variously during the day according to the movement of the sun. Fig. 94.

Yet, some project evidence good lighting, but poor openings once windows are almost absent and openings are depending on some voids in the structure and skylight opening, such as Re: Build school. Fig. 95. However, in the projects EAA/ZAH the classroom had no windows, but the properties of the applied materials allow light to flow into the interior space. Fig. 92.

Openings allow us to have a daydream, sunlight stimulating our minds, it provides us with energy and improves our moods. However, having the natural light as the only source of lighting the classroom is not possible. In the article, *Lighting For Schools* (2001), James R. Benya argued that for 'lighting to be effective, daylight must be supplemented by automatically controlled electric lighting that dims in response to daylight levels.

Thus, a combination of natural and artificial lighting is required for the efficiency of the classroom. Unfortunately, many camps face frequent electric black downs emphasizing the need to include natural light in the classroom design. Concludingly, openings in the classroom design are necessary to promote the feeling of continuity and normality and increasing the special space poeticism, promote children's imagination, and facilitate their creative thinking. With various construction techniques and design, the openings vary from one project to another indicating that construction material and techniques and the design of the classroom structure impact its efficiency negatively or positively, thus when choosing certain materials and design the classroom the openings and illumination must be taken into consideration not only as voids for light and air circulation but as tools that ameliorate the classroom environment and student performance.



Fig. 92. EAA/ZHA, the properties of the construction materials allow light to flow to the interior. Source: edited by G.H.



The New school building illumination



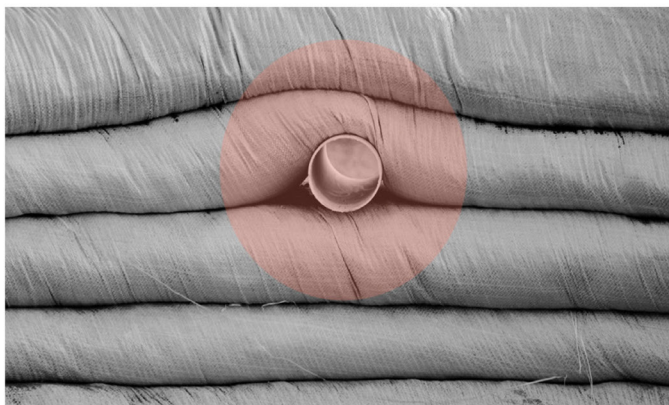
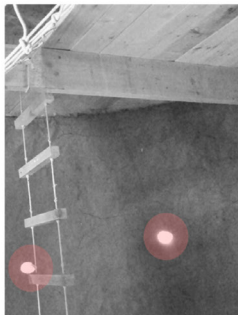
The use of artificial lighting during the day in the old school shelter.



Fig. 93. Jarahieh school, various lighting by adding skylight windows and side walls windows. Source: edited by G.H.



100C Azraq school.

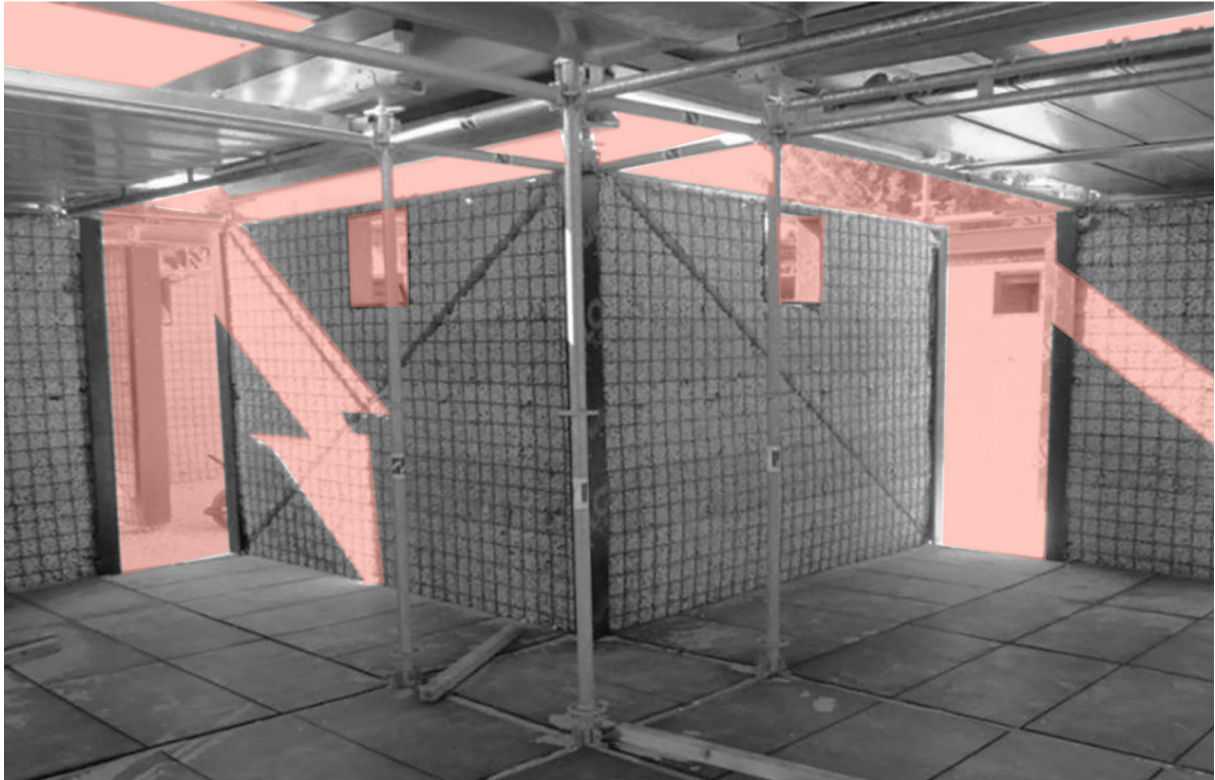


100c Al Zaatari classrom.



100C Azraq school.

Fig. 94. 100C Azraq, Alzaatari schools using traditonal lighting infunced from the traditonl design and matrial of the schools. Source: edited by G.H.



Re: Build school lighting and openings.during the construction process.



Fig. 95. Rebuild school, lighting, and structure openings. Source: edited by G.H.

Playground (Spaces of hope)



Fig. 96. Playground and informal social nodes. Source: G.H.

For children, play is a legitimate right. It's the core of their physical, mental, intellectual and social development and their physical health and well-being, being also a form of learning (Smith et al. 2013). In school, playtime and playground are vitally important features to children's emotional development and social skills (Smith et al. 2013). As part of children's growth, playing provides them opportunities to practice and set the skills required to live in a complicated world and can happen in a vast spectrum of spaces. (Yogman et al, 2018). For refugees' children, the role of a playground is crucial for the healing process.

According to UNHCR, a regular refugee can live for more than 10 years within a camp. That means an entire generation to be born and raised there. Children who are constrained to live in camps, often live in environments that don't provide them with a safe, stable or supportive, vibrant atmosphere.

The Right to education is essential to children. However, article 31 of the UN convention for the children's rights states that should be recognised the right to: "rest and leisure, to engage in play and recreational activities. To participate fully in cultural and artistic life" (Convention On The Rights Of The Child, OHCHR 1989). That means that learning and playing are essential for children's development and thrive, and the absence of one will affect their overall psychosocial, cognitive, and emotional development.

John Goodwin (2019) stated that all children need to play in order to learn and grow. Another study by Hirsh-Pasek and Golinkoff (2008), suggested that play is equal to learning, since children learn to develop their language, emotions, creativity, cognitive and social skills, in addition to their healthy physical development by playing.

In the context of a refugee camp, playing is an essential factor for children psychosocial, emotional and cognitive development. It brings back a sense of normalcy, along an imaginary escape, stimulating in refugee children their psychosocial and physical skills. Considering the playground as a supportive environment (Yogman et al. 2018), it provides a psychosocial escape to recover from trauma. It is a place of happiness and hope where children can just be children again without the burdens of the asylum life (Garcia 2015).

The playground is a central element of school. It complements the educational process once playing and learning are inextricably intertwined. For children, the playground is not limited to a particular form or design since children's minds are always attentive, active and excited to acquire direct knowledge from mother nature. Children should be surrounded by the natural elements that have educational values, in order to allow their minds to encounter daily life experiences (Dr. VIMAL KISHOR 2015).

As children adopt spontaneously the surrounding environment that serves their desire and intent to play, for instance, children in camp may use the camp borders as a climbing wall, the discarded tires as a swing, or as a ground roller, and gravel and mud as modelling material. They simply perceive and transform the environment and its elements applying their creativity and imagination to make it suitable, as possible, for them.



Fig. 97. Refugees children are adopting camp landscape elements as playing equipment. Source: Pictures by Bashar Jalal kasem

The playground has social, cognitive and physical dimensions (Bennet et al. 2012). For refugees playground has an additional dimension which is the healing dimension. “The first step is bringing education; the second step would be to offer the children space to just be children.” (catalyticaction 2015a).

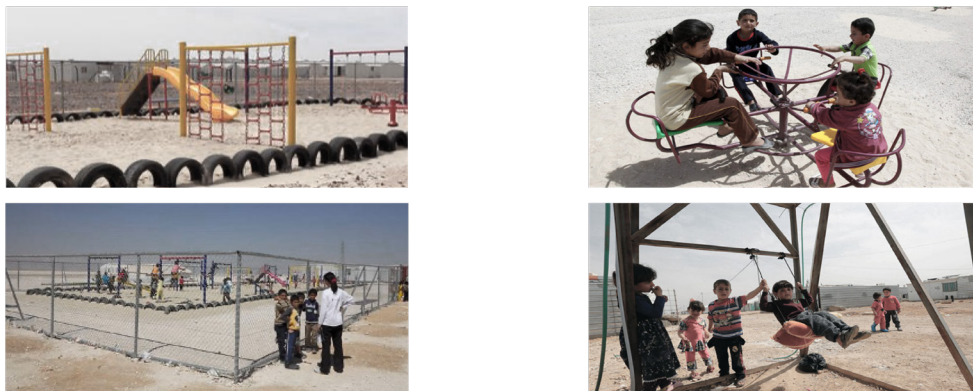


Fig. 98. Poorly equipped playground in Al Zaatari camp 2017, Jordan. Source: United Nations.

When children play, run, etc. they adopt the environment around them to interact with its components forming their own playing/playground context. For example, in the project 100C al.Zaatari school, children use the wooden elements of the wall structure to climb, turning the building itself into a playground. However, the project design followed an approach that provided children a particular adoptable environment and that by adding some spatial elements such as the net between the first and second floor, the rope stairs, it is allowed to use the building as a playground, both from its interior and exterior. This project is an excellent example for optimizing constructive resources and elements, amplifying the building appropriation by its users. Fig. 100.

Some projects design the playground as an outdoor space poorly equipped such as in the project of RE: BUILD and JARAHIEH, the playground is a patio between classrooms. Fig. 100. In JARAHIEH the playground consists of a patio with a wooden bench and a classroom exterior wall designed as a climbing wall for children. Despite those recreational spatial elements, the playground space still considered poorly equipped; it is more an outdoor space open space that sport free playing with borders, a patio for children gathering. However, those spaces don't support children playing and physical activities adequately.

Unlike the case of Jarahieh and Re: Build schools, in 100c Azraq school, the playground is a patio between the classes, yet, is enhancing the children's social harmony throughout its spatial elements. Fig. 100. Such as the brick benches, the building's outside stairs, and the edges of the brick planter on the middle of the patio. All of those elements are part of the school design supporting and stimulating children in their playing and recreational activities.

Some projects aim to promote learning and playing, in the refugee camp context, through building portable playgrounds to be adjoined to the camp's schools, providing children with playing facilities.

Ibtesam playground, is a portable playground constructed in August 2015 in the refugee camp of Bar Elias town (Lebanon), by the CatalyticAction. Fig. 101. Next to school it provides to the Syrian refugee children a playing facility in the camp, responding to the lack of space solely dedicated to children. The playground design consists of a wooden structure along some discarded materials, reusing materials from the camp, inspiring locals' refugees to reuse.

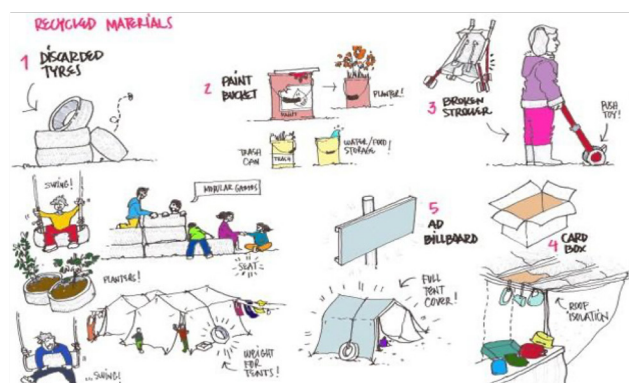


Fig. 99. The camp's discarded materials used to form the structure of the Ibtesam playground. Source: CatalyticAction.

An approach that aims to empower the community through the design process by engaging children and their family in the designing process, the project enables children to be a part of the process prioritizes to design it and draw it, which promotes their attachments to this place, through creating a special connection with place, in addition to normality and belonging to this place. Play is instinctive for children. When asking a child from a refugee camp what is a playground, their conception would not be different from the ones you'd get from a child anywhere else in the world (Yogman et al. 2018).



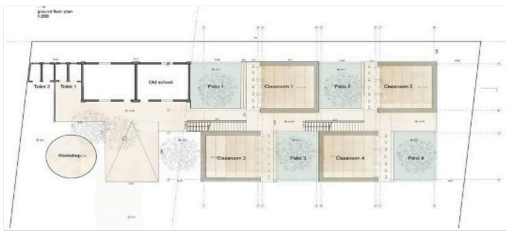
School structure as a climbing wall.



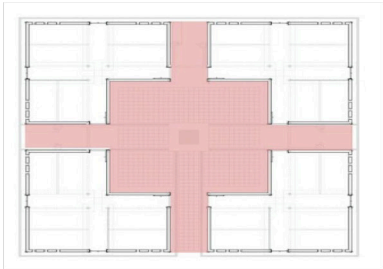
Providing children with a fabric net and stairs rope inside the 100C Al Zaatari classroom.



Playground as an equipped patio



100C Azraq semi patio in front of each classroom as a playground for children.



Re:Buid ineligible playground



Using the structure of the school to enrich the playground, Jarahieh school.



Fig. 100. The Playground in each case of study. Source: projects organizations, studios, edited by G.H.

Ibtesam playground



Fig. 102. Refugee children imagining their future playground as green space with recreational equipment. Source: Catalyticaction 2015



Fig. 103. Children engagement in building their playground. Source: Catalyticaction 2015

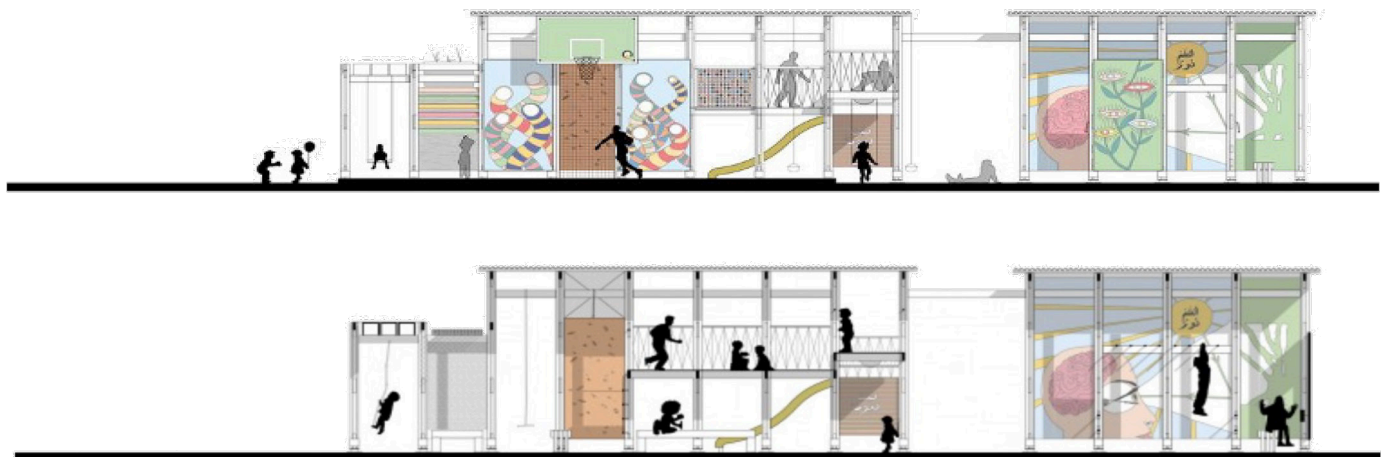
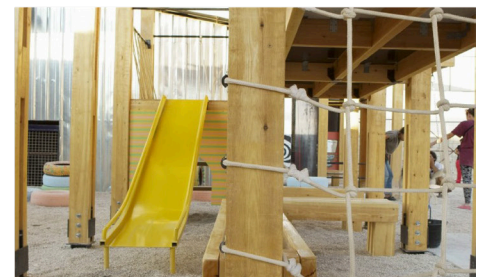
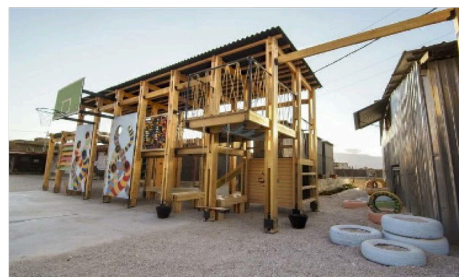
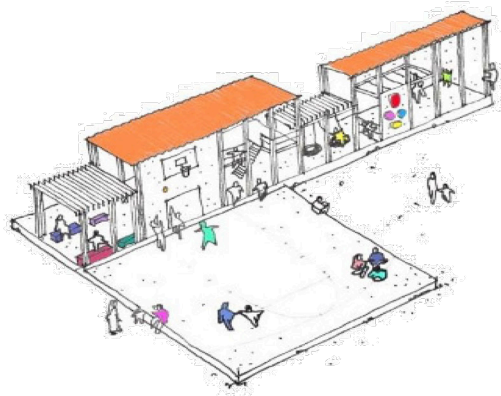


Fig. 101. Ibtesam playground. Source: CatalyticAction 2015.

During the research of Ibtesam project, which was done by the catalyticaction team, the team asked camp children about games/activities for the playground, most of them suggested “swings, slides, balls, seesaws, jump-ropes, and elastic cords. The environment that was most recurrent among the children’s ideas was a green space with flowers and trees; a place where they can play with their friends and relax. The sun was shining in their images even though sometimes clouds are depicted.” (Catalyticaction 2015b).

The lack of safe places for play and learning affect negatively the school readiness and children’s healing and development process. (Garcia 2015). A playground must be a safe place, nurturing relationships and improving social skills, which decreases stress among children and tends to increase motivation to interact and socialize, enhancing the social cohesion. A Russian psychologist, Lev Semyonovich Vygotsky (1966), suggested that when children actively engage in practical activities and have playful interactions, the acquisition of new social skills is fostered (Yogman et al, 2018).

Anita Old, states that “the motivation to interact with the environment exists in all children as an intrinsic property of life, but the quality of the interactions is dependent upon the possibilities for engagement that the environment provides”(Old 1979). Consequently, children in camps must be provided with a rich outdoor environment, a playground that, although without any special equipment, would allow them to act spatially.

Although in most of the cases, it was unequipped ‘ patio’ or semi patio, those spaces can’t be considered as a playground as an outdoor space. However, when designing an outdoor space as a playground by defining its specific pavements or specific physical limits, it will ensure children’s safety and social interactions during break time.

The social interactions between children require catalysts don’t have to be presented in a special form or kind of equipment (Swing, Slide, etc.).

In the book “Biodiversity and Health in the Face of Climate Change” (2019), the authors stated that children who live in urban areas, compared to children from rural contexts, are usually exposed to higher levels of several environmental risks such as air pollution, noise, evidencing lower levels of physical activity. Since those children have limited access to nature, that has a negative impact on their psychological health and cognitive development. (Marselle et al. 2019).

For refugee children, due to the camp’s location and planning, the green natural elements and spaces are very infrequent. In the article “Participation and Wellbeing in Urban Greenspace: ‘Curating

Sociability' For Refugees and Asylum Seekers" (2019), the authors emphasise the importance of green spaces for refugee's wellbeing and social inclusion (Rishbeth, Blachnicka-Ciacek, and Darling 2019). Therefore, the absence of such spaces will impact negatively refugee children development as well as the community wellbeing.

During the design process of project Ibtesam, refugee children drew green slabs, trees, flowers, grass as part of their imagined playground, which demonstrates the importance of the natural elements for them. Fig. 102. For a child, communicating with nature is innate, and considered to have a defining role in their development, it may be assumed that the natural, green elements are symbols of the peaceful, colourful life they are seeking (Marselle et al. 2019).

Accordingly, access to natural elements is critical as they suffer from trauma and stress due to their experiences of displacement and conflict. Hence, designing a playground with green/natural elements will enhance children's psychological and physical health. It stimulates their minds, reduces their stress average, enriches their childhood and promotes their development. On the other hand, it will recoup the deficiency of such spaces within the camp allowing the entire community to thrive and heal, strengthening social cohesion and inclusion.

The surrounding contexts influence children's recreational activities and behaviours because they imitate activities and scenes that they have experienced (Hirsh-Pasek and Golinkoff 2008). However, in refugee camps the playground tends to evidence a pragmatic approach that serves strictly school's structural components.



Fig. 104. children will find a way to play. Source: Bashar Jalal kasem

In conclusion, the schools in camps should be designed to encourage informal learning regarding the playground at the same level as the classroom where formal learning occurs (Lasswell and Managers 1985), since playing is essential to children learning and physical and psychosocial development (Hirsh-Pasek and Golinkoff 2008). Therefore, when designing a school for refugees the playground should be considered as an essential part of the school design and configuration by including in the design some structural elements that encourage children's recreational activities and recoup the deficiency of the resources and playing equipment in the camps.

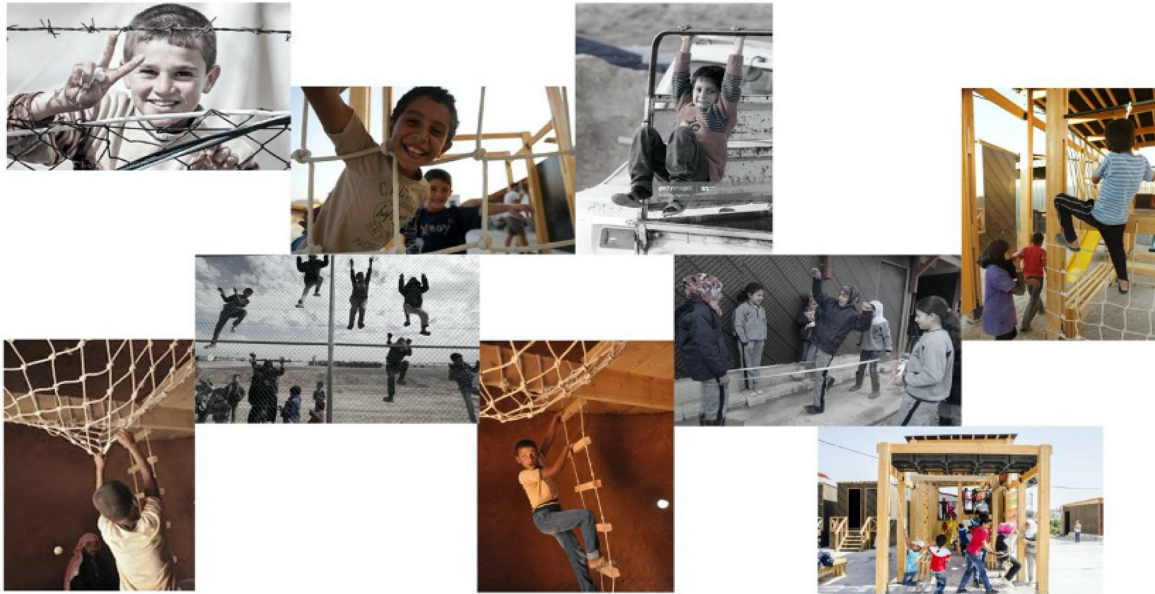


Fig. 105. Playing remains in harmony with the contrasting colors of childhood. Source; Photomontage G.H.

The informal social nodes

To human interactions, the spatial contexts in which they happen are of primary importance. Typically, students tend to form groups during break times and segregate those groups to particular. Those spaces are more likely to be the landing of the staircase, a particular tree on the playground, or the entrance steps. These spaces will be identified as informal social nodes (ISN), in this study.

In the book *Designing Places For People* (Lasswell and Managers 1985), the authors called ISN 'The Informal Social Centres' (ISC). According to that, the school design should foster the formation of groups and friendship in a healthy physical frame, providing students with ISN, and its absence will lead to unconscious adoption of random spots.

For refugee students, the need for such spaces is critical and must be regarded by schools' design mainly due to the lack of public spaces in the camp. Since these Informal Social Centers (ISC) encourage student inclusion and interactions, which leads to strengthening social cohesion, they will reflect positively on the social life of the community inside and outside of the school.

Despite that schools in refugee camps usually are one unit, or a group of several units with an outdoor area, the planning of ISC/ISN can be achieved through adding some spatial features to the building layout. They can be a tree or shaded area, a sitting area, pillars to gather around, and lean things against. Particular spots that encourage social interactions and inclusion.

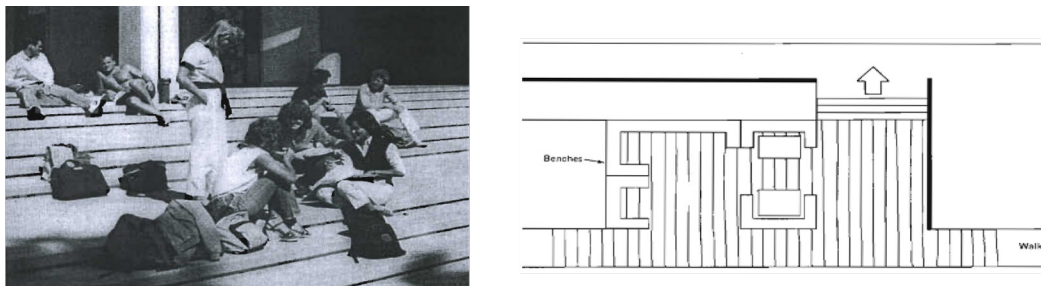


Fig. 106. Figure on the right shows the informal social centers(ISC), that interfere with traffic at building entrances. the second figure shows how those informal social centers were intentionally designed by adding some chairs to avoid interfering.

Many authors suggested that schools should include in its design public and common indoor and outdoor social spots to encourage social interactions among its community rather than the classrooms and playground. For instance, the study “Life Between Classrooms Applying Public Space Theory To Learning Environments” (2010), the authors described this kind of spaces as being influenced/influencing by/for urban planning, dividing it into three categories: THOROUGHFARE, MEETING PLACE, MARKETPLACE⁴⁰. Following a more complicated approach, its main concept is to provide students with high quality collective spaces serving thoroughfare/meeting place/marketplace functions. These three spatial features should be considered for the indoor/outdoor school spaces.

Another study, Social Learning Spaces and Student Engagement (Matthews, Andrews, and Adams 2011), described the informal social nodes as social learning spaces (SLS). The study revolves about designing a space for students in the science faculty at the University of Queensland, enabling students to use it between class time for studying or socializing. Through this, they define SLS as “purpose-built, informal physical spaces which act as a medium through which the social and academic aspects of student life can coincide” (Matthews, Andrews, and Adams 2011). The approach is about designing a space that invites students to be inside, proposing that SLS should take into consideration the students’ interest and comfort. This approach is similar to the ISC concept by (Lasswell and Managers 1985), mentioned earlier.

The three studies have unanimously agreed on the important role of such spaces in improving social and academic life. Each study draws a particular set of spatial characteristics for those spaces, but the intersection among them suggested that such informal social spaces may be:

40 **THOROUGHFARE** Public space needs to encourage people to move through it by foot or on bike, in a school setting this means that space is used to access a number of different semi-private rooms or facilities.

MEETING PLACE means that there are furnishings that encourage people to stop and chat with each other.in the school indoor like benches and pillars to gather around and lean things against, small, round tables to gather at ‘edge’ seats in windowsills or booths, and floor cushions.

MARKETPLACE refer to any place at which a transaction of ideas or performance might occur such as learning studios, lecture theatres, libraries, cafes and specialist facilities. (Prakash Nair and Annalise Gehling 2010)

- An area with a form of seating, shelter, shaded corners.
- Intermediate space on a circulation route that shifts from informal social centres to more enclosed spaces like the classroom, library, etc. (Thoroughfare).
- An open area on a crossroads at a major destination where people can see each other while setting or passing through there (Marketplace).
- A closed area with comfortable furnishing where people can learn, seat, and gather (Meeting Place).

Besides these common features, the characteristics of the 'informal social spaces' contrast from one study to another. Nevertheless, all of them emphasized the significant impacts of such spaces on students and the school's community, working as mediums to improve social and academic life coincidentally.

All the mentioned studies concerned about forming peace contexts within the school. Yet, school children inside or outside camps interact equally with the spatial stimuli in their school, but the differentiation is the extent of the school impacts on the community. The existence of this kind of space (ISN) in the camp's school planning is essential for refugees' children development and thriving. Dianag Oblinger, in his book, "Learning Spaces" (2006), argued that "spaces that catalyze social interaction, serendipitous meetings, and impromptu conversations contribute to personal and professional growth."

Syrian refugee camps, around the world, are being turned into settlements⁴¹ since the Syrian conflict has exceeded nine years. As consequence the refugee community is becoming part of the host society. However, it doesn't mean you are a shipmate. (Lasswell and Managers 1985), our social behaviours are motivated by our environment, thus there is a need to provide people with places that encourage the coexistence and improve inclusion and integration between the host and refugee communities.

In the book "The Poetics of Space"(1969), Gaston Bachelard argued that our memories are localized in space, not in time. People create emotional and social bonds with specific spaces according to their memories. Through the psychological, emotional interactions formed unconsciously forms a sense of belonging.

In the analyzed case study, schools are Edu-social objectives that tend to turn schools into

⁴¹ **Settlements** are often viewed as having more permanent shelter structures.

Refugee camps are viewed as having temporary shelters which may be tents, or other forms of shelter ("A Guide to Understanding Refugee Camps" 2015).

community centers. In some cases, the school is also a social council, a 'MAJLIS' according to the local and refugee communities, being part of both communities. In refugee camps, designing outdoor and indoor spaces to be perceived as informal social nodes will enable the refugee to develop a sense of identity and attachment with those spaces.

Social gatherings usually occur spontaneously. People tend to prefer the fast and spontaneous meetings, using informal spaces such as a shaded area or benches, etc. The existence of intimate social spaces is essential to form collective memories, attachments, and identity. Some cases of the study were designed with multiple areas that would allow a wide range of uses, both by students and the community members, evidencing characteristics of informal social spaces (ISN).

In the project of 100C Azraq, the school layout consists of sequences of spaces with different functions, including areas that can perform as ISN. Fig. 107. illustrates the school's features that can serve as ISN, such as the patios between the classrooms, the trees planted in the middle of the courtyards, the exterior staircases of the classrooms' units, and the classrooms terraces.

The school design is an great example of how to ensure the existence of the informal social nodes (ISN) in a refugee camp context. The school design includes enclosed space (classroom) and open spaces (patio, shaded areas, terraces) Fig. 107, which can serve as ISN. These informal spaces for learning and playing were designed with both educational and social purposes, serving either students or their communities on different occasions.

On the contrary, the 100C Al Zaatari classroom school design is a single unit. The indoor space is simultaneously a classroom, a gathering space,for community (a hub for both communities), and the structure work as recreational space for children. The project is an example of formal(classroom, community hub), and informal social nodes the structural elements that use to promote social interactions and harmony between both communities. Fig. 108.

People in the village and camp refer to the building as the 'dome' due to its shape. Yet children called it the school. The different uses of the building create different notions about its space.

Re: Build and Jaraheieh schools have similar designs. Fig. 109,110. Both schools consist of a group of classrooms with corridors that linked them together and to the central patio, which serves as a playground for students. Those school components have the quality to be ISN. In Re: Build school, they are relatively unequipped. However, in the case of Jaraheieh, a group of elements like the wooden benches and some modified exterior walls around the patio (as recreational toys) which improves the

social efficiency of those places. Fig. 109.

The layouts of both projects consist of corridors between the classrooms that lead to the central courtyard. These three spatial components are poorly furnished or equipped. Fig. 109,107. However, they might be improved by adding some elements providing them with characteristics of the ISN, to be used by community members after school times.

For instance, adding a tree basin (shade) with benches (sitting) around it encourages students to mingle in the patio, fostering social interaction between students and parents (both from the refugee and local community). These informal meetings spots promote peaceful coexistence and social coherence.

In the EAA/ZHA, the design shares the area around it. The community will use the indoor space as a community center. Yet during WISE 2019, the structure was used to show the project, being the shaded area by art activities. Fig. 111.

The concept of using the exterior shield as a stimulus so people can gather there, in a similar design feature applied by the 100CAI Zaatari. The simplicity of this feature emphasizes that informal social nodes can be part of the design components, yet it doesn't require a particular area. Both projects are deeply attached to the school structure design. Its internal space is a meeting area for both students (classroom) and parents (community center). At the same time, its external design provides opportunities for informal social nodes (ISN) regardless of their different architectural style.

On the Maidan tent, the main objective is to provide refugees with a public common ground, to recoup the deficiency of the open spaces in refugee camps. the project encourages people to meet, allowing them to engage in social and cultural activities within a formal and informal framework. In this case, the larger space in the center is bordered by a ring of smaller areas where people can mingle in smaller groups forming formal and informal social nodes according to community use. Fig. 112.

In conclusion, the importance of informal social nodes in the design of refugee camp schools aims to recoup the lack of places such as Maidan. The social common public spaces are crucial for promoting a sense of community.

Regarding the school's outside spaces (ISN), many studies argue that learning can happen all over the school's space, not limiting it to the classroom (Matthews, Andrews, and Adams, 2011). Informal social nodes (ISN) provide children with informal learning spaces, amplifying social experiences, and enriching their childhood.

The Syrian refugee camps in the host countries are turning into informal villages, as most of them

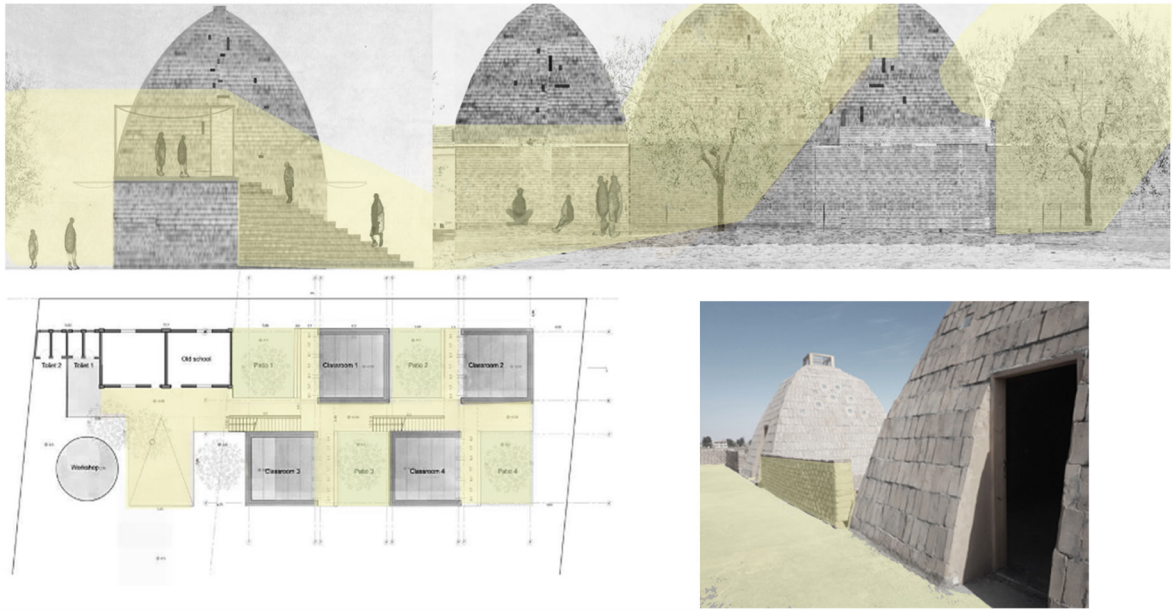


Fig. 107. 100C Azraq school ISN. Source: EAHR, edited by G.H.

The terraces farming ISN.



Fig. 108. 100C Al Zaatari classroom ISN. Source: EAHR, edited by G.H.

Classroom as a Social space
for children and their families.



Fig. 109. The informal social nodes in Jarahieh school. Source: CatalyticAction 2015, edited by G.H.

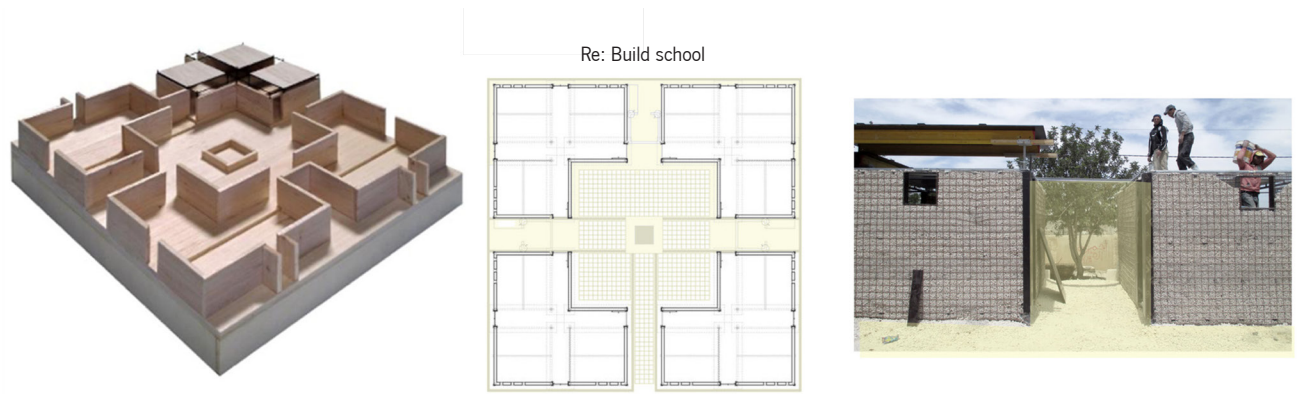


Fig. 110. The ISN in the school plan corridors and patio. Source: Pilosio Building Peace organization edited by G.H.



The using of the shaded area provide by the design for some social purposes during the WISE conference.

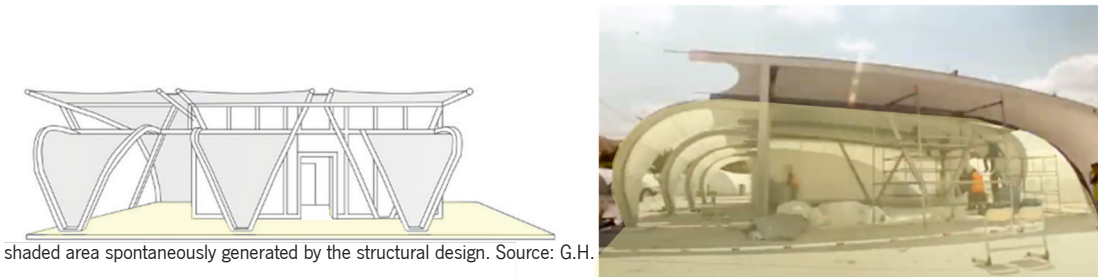


Fig. 111. EAA/ZHA Classroom. Source: Education above all edited by G.H.



Fig. 112. Public common areas perform as formal and informal social nodes according to their use.. Source: Maidan tent, edited by G.H.

have been functioning for more than 9 years. For instance, the Al Zaatari camp was constructed in July 2012, being nowadays larger than the Al Zaatari Jordanian village. As camps are expanded, in space and time, communities will have to live together, evidencing the need for spatial catalysts that can encourage peaceful coexistence and social interaction among them.

As such common public spaces must be considered, along with schools, as an essential instrument for peace. Once schools are flexible social facilities, classrooms and playgrounds and other schools components provide formal and informal learning and social spaces. From this point of view, schools enhance the social (re)construction of communities. Planning the schools with a more open layout and socially engaged design can answer to the needs of the specific context in terms of social/public space.

Those ISN can enrich the school to be, simultaneously, social centers for refugee settlements like the case of EAA/ZHA, Jarahieh, Re: Build, and for locals' villages like the case of 100C schools. Yet, at a smaller scale, the ISN might simply be focal points across the school space, that promote peers' interactions within the school as well as across the community groups. For example, the school patio can serve, simultaneously, as a playground or a semi-public space. Under this idea, the corridors between the classroom can represent the concept of 'Thoroughfare' such in the case of Jarahieh and Re: Build.

Furthermore, in the project 100c, the schools were located outside the camps to serve both communities (refugees and locals). Despite that both cases have the quality to have formal and informal social nodes, the 100c Azraq school has more effective social nodes as it includes 'Thoroughfare' and 'Marketplace' in its layout, the spatial components that were mentioned earlier, which turn the school to be a social magnetic on the landscape (Matthews, Andrews, and Adams 2011). Consequently, providing people with the informal social nodes, besides formal ones, will foster the spread of peace spirits, encouraging people interactions and communities' inclusion, thus promoting their social harmony.

When refugees move to a new place, they face difficulties to interact with the new anonymous environment. A camp is decontextualized settlement. It is created on no man's land, in an unfamiliar environment for refugees. James Holston in his book, *Spaces of Insurgent Citizenship* (1998), suggested that the shock of defamiliarization influence people's interrelationships and communication, since they are facing the same struggle in trying to bond with the new context.

For refugees this will foster stronger relationships and bonds within the refugee community, and with the local community outside of the camps' borders. Simultaneously, it must be considered that for the host community, those new "neighbours", suddenly were pushed into their daily life. That often generates conflict, discrimination and thus, social disorder. The political, social and cultural conflict between among communities can shape children's thinking and behaviour negatively, generating the false need to build a school for each community, debilitating social inclusion and cohesion.

James Holston, in his book "*Spaces Of Insurgent Citizenship*" (1998), suggested that this new and decontextualized environment will lead people to face defamiliarization. For instance, during disasters and crises, a sort of collective action is generated spontaneously between people in order to face this new situation, people tend to naturally cooperate, communicate, and interact with each other. In turn, this will promote the social interaction and egalitarianism strengthening social cohesion. Holston (1998) stated that these decontextualized places must be a neutral land that welcomes different people, different activities, promoting a suitable and adaptable environment for social interaction, and inclusions.

Accordingly, school is naturally a place of congregation for children from different backgrounds, thus, it must evidence a multivalent human spirit to embrace those children. As a gathering place, it should provide inclusive communication and engagement, without imposing particular beliefs or orientations (political, religious, social, cultural). In other terms, the school can represent the decontextualized environment (Holston, 1998), which will stimulate people from different backgrounds and cultures to communicate. In the context of the refugee camp, building a school is considered as a first step to solve an essential obstacle for refugees' which is ensuring the right to education. At the same time and having in mind that school is a social entity, it also contributes to solving another essential obstacle for refugees: social disorder between the refugees and the host community.

The case study analysed in chapter two, evidenced an Edu-Social purpose. Each project selected accurately construction materials and techniques in order to be economically affordable, socially impactable. By designing the school with Edu-social purpose, new approaches were followed engaging refugees and locals alongside with professionals in the construction site. Also, and in a second stage,

100C AL Zaatari school.



Fig. 114. 100C Al Zaatari classroom construction process and social engagement of communities. preparing the sandbag school. Source: EAHR site, project's Introductory video.

Community and professionals
are planning the schools together.

100C Azraq school.



Fig. 115. 100C Azraq school, professional and communities. preparing compressed earth blocks and building the school. Source: EHR.

Re: Build school.



Social engagement in the construction site.



Youth refugees building space for the community.



Fig. 116. The social engagement in the construction process of Jarahieh, Re: build schools. Source: photo collection by G.H.

Jarahieh school



Syrian youth received special training at the project site.



women contribution to building Jarahieh school.

EAA/ZHA Classroom.



Fig. 117. The construction process of the first portable classroom. Source:

those buildings become focal points for educational and social purposes.

For instance, in the project of 100C Azraq, 100C Al Zaatari, both schools used earth construction techniques (Fig. 114, 115). In 100C Alzaatari school, the building technique was based upon the super adobe technique, consisting of many layers of sandbags, forming a beehive, in a circle layout. A form influence in Aleppo villages, home traditional architecture, the cities where the majority of AL Zaatari camp came from.

Azraq school, the project was built using compressed earth blocks, workers from Azraq village and the Syrian refugees, who show a great interest and help, said that they used this method in their former homes.

The schools were constructed outside the refugee camps, between local villages and the camps, to receive children from both communities. The school location enhancing its functionality and efficiency to serve as social focal points for communities that break the social gap between communities. The building location promotes the notions of the common ownership among the two communities. Also, in the construction process the concept of the new commonplace was promoted, once all members of both communities, were implied in its construction, thus promoting the sense of belonging and cooperation among communities.

The same raw material is an available permanent source at both sites which makes it economically affordable. However, each project applied different techniques, allowing different forms. Still all techniques are derived from the cultures of both communities. A ninety-eight-year-old refugee, Um Sultan, in Al Zaatari camp recalled about the school material: "I used to make the plaster of our house every year. We used mainly soil and water and mixed it with straws. Straws make the structure more resistant, especially when it's raining".

Michele de Marco, Director of EAHR Denmark, said "Most of these people used to work with these materials back in Homs, so they know how to handle them. They just needed a bit of professional help with the typology and the building technique".

The familiarity with the material and its characteristics and maintenance will help refugees to recoup the sense of belonging and their sense of property and stability. It's like having a memorial piece of homeland which can break the ambiguity about this new place and its culture, from one hand, and it will enable them with skills to build new units in the camps independently or in the future to rebuild their countries.

However, other projects used more modern techniques to formalize structures that can be erected, and

redeployment is reusable or transferred to be used in different places.

In Re: Build school, earth materials, and aluminium scaffolding tubes to form the entire structure. Entire elements of the structures and can be reusable and are locally affordable (economically affordable). The project followed a new constructive system, a team of nine works that along six hours a day for two weeks were able to complete one unit in AL Zaatari camp in Jordan. This kind of martial and the new techniques enhance the engagement and inclusion between Syrian refugees and locals as they were engaged together in the construction site. Fig. 116.

In the case of Jarahieh school, a different approach was followed by the reuse and transformation of donated materials with some locally source able material. Although, the construction techniques were different approach from using earth construction as in the case of the previously mentioned projects, yet it intended to strengthen the building of the social bonds between refugees and locals by the engagement in the construction process. Fig. 116.

In the case of EAA/ZHA school, the structure is movable, deployable, easy to assemble, and dismantle. The social engagement of this project has a vast extent due to the flexibility of the structure, serving multiple and varied functions. We can assume that when the structure is no longer needed in the camp, it can dismantle, assemble, and transfer to another place where it can be used again. Fig. 117.

In the project of Maidan, a different approach was followed. The Ritsona refugee camp (Greece), includes refugees from different nationalities and backgrounds. The problem is not between locals and refugees, but between refugees Hence, the project main aim is to encourage refugee social interaction by providing them with a common public area, a social Maidan (square).

The Maidan's layout and design are the main factors for achieving its functional efficiency as the common, public place that improves the social engagement between communities. The circular shape of Maidan invites people to enter from any direction to that shaded space thus, it is an additional conscious attempt that works on increasing the functional efficiency of the space. The main project purpose is to promote the social interactions and engagement between refugee communities within the camp as they came from different backgrounds, and that by providing them with a sheltered structure that ensures common public space where refugees can engage together in different social, cultural activities. Fig. 118.

As a conclusion, when building refugee camps, the camp is built within social and educational obstacles, due to the deficiency of infrastructures (educational, social, cultural) and public areas, amplifying social disorder, the antithesis of the social cohesion.

The social cohesion can be defined as the 'solidarity' or 'community coherence, thus the community who are facing the same circumstances and have the same context can achieve the social cohesion (Bergman 2018). As Holston(1998) suggested, building a new neutral place, a decontextualized environment, will provide different people with the same experience, facing the same circumstances. Thus, building schools as a social and educational propellant, inside or outside the camp, will serve refugees and local children and their communities. It should promote a peaceful co-existence, increasing sense of community and, therefore, the spatial features of those new places must be accurately determined.

According to the cases study, the strategies that followed to design and construct the school can contribute to its critical role as an educational and social entity in the refuge context. The social engagement in the project for people from different cultures influence their interrelationship and behaviours, help them to develop and grow by exchange knowledge, life experience and professional skills with each other. (Holston 1998).

The new school structures and its constructive techniques can consider solutions that recoup people with lack of life structures providing them with neutral places, peaceful co-existence environments. Places that belong to community members, contributing to their life, economically and socially.

Social engagement among community members can occur during construction and post-construction process, depending on applied materials and techniques, however there is no way to assume which methods, materials foster efficient. The previously case study showed examples of different approaches and strategies that can be followed in choosing the constructions material, techniques in order to promote the social engagement and efficiency, thus to achieve the social cohesion considering the social engagement one of its basic domains (Bergman 2018).

Some methods, materials would be more economically affordable in the short term, and contribute to improve community lives economically and socially such as the earth construction (100C, Re: Buid) or the reused structures method (Jarahieh)

Some promote the social engagement by following new technological strategies in erecting a moveable structure. That might have a high construction cost, yet the possibility to move it and reuse it makes it economically viable in the long term, such as in the case of (EAA/ZHA).

Fear and uncertainty between the refugees and local communities generate social gap and protective behaviour for both communities, leading to a sort of segregation and discrimination, thus the state of social resentment, inequality and resources scarcity for some groups within the society which

mean a state social disorder.

Meg Bartholomew (2020) in the article “Fostering Social Cohesion In The Built Environment” suggests that when the city is heavily isolated the social cohesion of its society is at more extended risk, as different communities will tend to enclose at themselves due to the fear of losing a sense of belonging and preserve their identity which generates social tension between the different communities of this society.

Yet, Bartholomew indicates that social drivers of cohesion can be spatial effects materialized by the urban planning or at a building scale, as the “dynamics of cultural transmission are one of the main drivers of processes of change.” Thus, creating places that promote people’s interaction and inclusion are essential to bridge the gap between different communities. The location of the school can impact its social efficiency, when the school is located in a neutral space outside of camps borders which will invite both communities to use it, prompting it as focal points that belong for both community creating in the community members trust and sense of pride toward this physical environment.

Finally, it is arguable to say that for the school in a refugee camp to achieve its efficiency to be an Edu-social space. It should ensure the social engagement and inclusion of different communities, including their development and growth. According to the previously analytical information, Certain factors can be followed for schools to achieve their effectiveness as a place for integration between societies. Those factors can be assorted as following:

The use of the construction process and choosing the construction materials accurately as an efficient means to bring people from different backgrounds together in a productive, healthy context.

The school structure configuration and space multi-functionality can encourage social bonds between refugees and locals through different activities that can occur in the school.

Although the social engagement in the construction process is beneficial to prospering the life of refugees and locals economically, socially, and for their future profession, nevertheless, it is essential to maintain this social harmony between communities by not limiting it to a particular stage that makes the process ends with this stage end. Hence, the school’s location is significant to its role as a social, educational contributor for maintaining the continuity of the social harmony between communities.

For instance, when the school is located in a neutral space in the landscape between the camp and the host community, it will invite both communities to use it, prompting it as focal points that belong for both communities since it was built by them and for them which provide them with the trust and a sense of pride toward this physical environment. For refugees, particularly, schools being outside the

camp will enable them to leave camp borders every day, give them a sense of life continuity, locality, and belonging to this new society and country. Whereas when the school is inside the camp, the process of social harmony between communities is much more challenging to be realized due to the camp's borders, its uninvited and ruthless built environment.



Children engagement in painting the square 'maidan' with BOAMISTURA art group.



Fig. 118. Maidan-Tent-social engagement through the design of the project and its polyvalence spaces. Source: Maidan Tent project.

Conclusion

Learning is a spatial and pedagogical system; school is the physical environment that embraces this system and considers a social, educational space for its students and staff. According to the gathered analytical information, in a refugee camp with the lack of the educational and social facilities, schools are providing a context that can recoup this absence mainly if it incorporates Edu-Social objectives through its design

The impacts of the school's built environment influence different life aspects in the school's community: socially, psychology, congenial, pedagogy (Colbert 1997). The school-built environment efficiency in attaining the educational, social process in an integrated manner can be measured by what is called 'school climate,' which is a predictor of the disorder and deformity in the school functionality. The school climate determines the school's function efficiency through its four major dimensions according to the national school climate council:

- Safety.
- Teaching and Learning (Academic Climate).
- Interpersonal Relationships (Community Climate).
- Institutional Environment (Physical Climate).

According to the main purpose of this research to turn the school into a social magnetic, Edu-social space, and the previously analytical information, the dimensions of the school climate in a school in a refugee camp can be assorted as:

- Safety.
- Development and Education.
- Social Inclusion and Engagement. The physical Environment(climate)
- Community Cohesion.

Yet, as the physical climate forms the physical environments of the other three dimensions of school climate, it frames the social, pedagogical, cognitive experiences of students through its principal dimensions. architects and planners should consider the physical climate as the core of the school climate to measure the school's functional efficiency for refugees' schools, by analysing the particular dimensions of the physical climate (school physical components) in order to obtain a positive school climate.

Bearing this in mind, the dimensions of physical climate for a school within the refugee camps are:

- Classroom (Development and Education).
- Playground and Informal Social Nodes (Community Cohesion).
- Construction techniques and materials. (Social Inclusion and Engagement).

According to the three dimensions analysis, the school can materialize the ideal Edu-Social environment efficiently and be a social magnetic within the camp if the three dimensions of the physical climate were as following:

Classroom, its physical circumstances (the layout and spatial arrangement, colors and materials, illuminations) should work as stimulating factors that enrich the classroom environment and foster students learning and development from one hand and forming an adaptable environment for different functions and use by the community during out of school time.

The Layout determines how the classroom space can be used; thus, it should be adaptable to different functions (educational, social, and cultural). Its Spatial Arrangement determines how social interactions and communication will occur and stimulate maximizing its aims.

Colors are also a principal factor in a classroom in order to stimulate children's minds to learn and thrive. Furthermore, colors are a critical factor for refugee children's healing and mental, psychological health, as it helps to improve their behaviors, mood, decrease their stress level, thus helping them to recoup the sense of life normalcy.

Also, lighting, through natural and artificial illumination, is critical for the classroom environment. The classroom should provide openings that allow children to daydream and promote space poeticism. Sunlight awakens minds, and it gives them the energy to learn and develop. Both natural and artificial lightings are required, as the daylight helps to create pleasant environments and solve the problem of the electricity shortage in camps. Yet the artificial light is vital for classroom use throughout the day by the community.

Playground is an essential component for children and communities. They allow refugee children to be children again, enhancing their right to play. Through play, their learning and physical and psychosocial health care improved, stimulating their mind and the acquiesce of social and cognitive skills.

Hence, Architecture is a tool to reinforce the children's sense of attachment and identity. The playground can recoup the lack of common social spaces within the camp, providing them with a public

ground for gathering and socializing during out of school time.

Informal Social Nodes the school design in refugee camps, should have some spatial spots to serve as social gatherings nodes with some spatial elements such as benches, stairs steps, trees planters, Etc. These spatial nodes enrich the school environment and provide students with focal points, nodes to be in, rest or study, gathering during out of class time. And it can provide the community with some 'MARKETPLACE' spots that attract refugees and locals to interact and communicate.

Social engagement and the inclusion of communities can be achieved through school construction materials and techniques. The material of construction can be one of the first key solutions to break the bonds of discrimination, segregation and reduce the tension promotes the integration between refugees and locals communities, by engaging them together in the construction process, allowing them to build a school that works as a social backbone of the community. The engagement of locals and refugees together in the construction process will improve their livelihoods and provide them with professional skills that will help them to improve their lives and build their home country in the future.

Concluding, a comprehensive positive school climate for schools in refugee camps turn the school to be a space of exception, an Edu-Social space with an effective social mechanism for the entire society and can be achieved through its physical climate and its dimensions by creating a productive stimulating learning environment considering its physical circumstances and components (physical climate) making the school the social magnetic within the camp's landscape to promote the peaceful coexistence, development of the communities strengthen their inclusion and integration, hence achieving social cohesion, resilience.

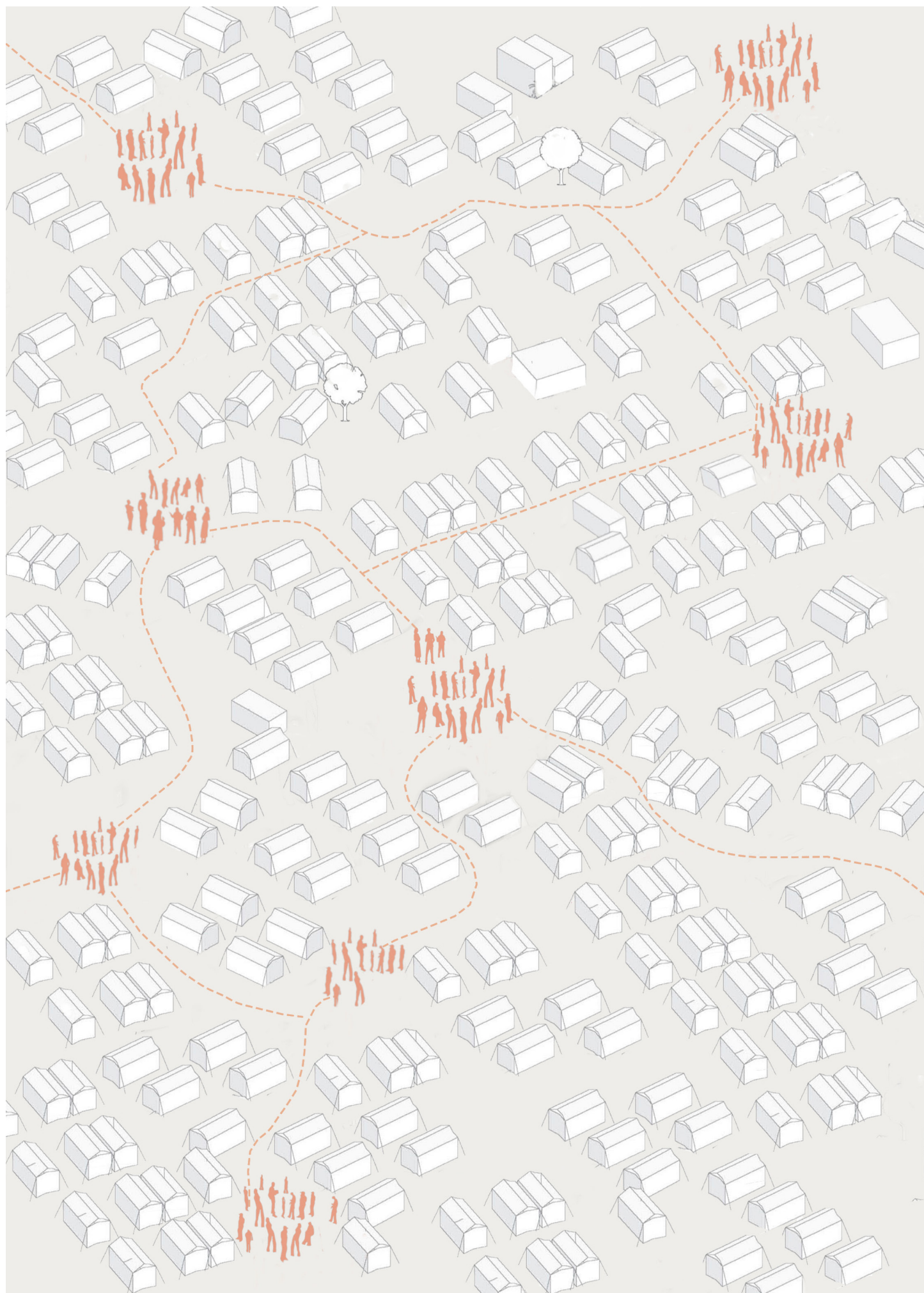


Fig. 119. Social magnetics in the camp. Source: G.H.

FINAL NOTES | **Conclusion**

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Conclusion

“People think conflicts come and go, but when conflicts come, they come to stay, and they stay for long”

Sheikha Moza bint Nasser, 2019.

Peace does not mean the absence of conflicts, it means to provide power to those who are living on the margins of life, it means to help them to recoup life normalcy, identity, and life attachment. One way to achieve this is by acknowledging education and schools as the primary means to help camp generations and their families for a better life. Refugees are the product of conflicts, and refugee camps are the humanitarian response to them. Camps are architectural portraiture, fabric tents or caravans reflecting an ephemeral state.

Displacement is considered a form of destruction during conflicts that generate an educational crisis. Statistics indicate that 50% of Syrian refugees to the neighboring countries are children (“Quick Facts: What You Need to Know About the Syria Crisis” 2020). Despite the attempts of governments intergovernmental organizations, and NGOs to provide refugees with essential reliefs, refugees suffer from segregation and tension within host communities, and the deficiency of educational, economic, cultural, and social infrastructure. Unfortunately, children who grow up in a war and destruction environment will not see what the stability of the family and community is and the dynamic and healthy hierarchy of the social system. School is a comprehensive social system, a minor, divided society, each with its role and duty, which allows children to recoup a sense of community to understand their roles in the community.

The study asserted that schools are places of protection, and sanctuaries for peace that embrace refugee children and adolescents and protect them physically, psychosocial, emotionally and mentally. Through providing them with knowledge and skills that will help them to prospered and enable them to face severe circumstances during the refuge life and post it. The purpose of this dissertation is to divulge the role of education in the provision of social and emotional, pedagogical, cultural, and economic support for refugees’ children and families through the educational facilities design components and practices.

The analytical study of particular educational modules illustrated that schools in refugee camps could be a space of exception by being an Edu-Social space through its design and location. By analyzing and intersecting those educational modules, the dissertation derived a set of common criteria which are:

Classroom. Playground. Social impacts and space. Social notions.

The research developed these criteria to materialize this Edu-social concept architecturally and to define its physical components by applying and evidencing the theory of ‘school climate’ for refugee camp

schools and its four dimensions that can be assorted as educational and development, physical climate, and social climate, safety. The theory is applied to achieve maximum functionality and performance of the school's material circumstances.

In this order, the research determined the components of the physical environment that embraced all the school climate dimensions, materializing this Edu-social space thus, identifying the primary architecture components of the school, which can be assorted as following:

- Classroom (Development and Education).
- Playground and Informal Social Nodes (Community Cohesion).
- Construction techniques and materials (Social Inclusion and Engagement).

The location of the school is a critical factor in its functionality as a social magnetic. As such, when the school is a part of the camp's landscape, it will impede its functionality as a social magnetic. But if the school was built in the landscape that binds the refugee camp and the host community, it would promote its functionality to be an efficient Edu-Social contributor to the social harmony of different communities (hosts, refugees).

We can consider that the research was able to achieve its primary purpose and defined the main architectural components of the school in the refugee camp to be functionally efficient as an Edu-social mechanism, which is a role displayed by the cases of study. Yet, its efficiency needed to be fostered and indicated by defining its architectural design.

Schools are an essential part of the camp. The research indicates that refugee schools shouldn't be designed and considered as just tents, but rather as a hybrid component with the dual objective, dual identity Edu-social, as the hybrid society refugee-local, which schools intended to serve. When school is an Edu-social space will not only enable the school to achieve efficiency as a cognitive and pedagogical development environment for the young generation but also as a social magnetic that works on replenish of the services' facilities and on eradicating the social complexities, discrimination, segregation inequality between the refugees and host communities. And that through promoting the social cohesion, engagement and inclusion between communities as well the economic aspect of those communities through each criterion that was explored to be included in refugees school.

These criteria enable the school to be an efficient Edu-social contributor through its accurate design and its architectural components, construction material, and its location. Each one of those three components(criteria) serves for a specific purpose to encourage the social harmony between communities

and draw the mosaic frame of social cohesion, resilience, and development for its individuals. Which in turn, will provide refugees with a sense of stability and belonging at a time where chaos, fear, and tragedy have become part of their DNA.

It is challenging to write the conclusion of this dissertation. A conclusion implies precisely enveloping everything, tying it off, and considering it as completed. However, the stories of those Innocent lives endure incomplete. This dissertation proved the value of education and its built environment as a peace mechanism to cultivate a sense of social inclusion and belonging to support refugee youth and their families to the new country, during their temporary life in camps. Certainly, the necessity to understand the circumstances of which refugees' education occurs is far from over. The research was based on the Syrian conflict and groups of cases of study in Syrian refugee camps. Yet it would be valuable for future investigations to investigate and determine how many facilities are required for each camp, the size of the facilities according to children's age, numbers, and the sort of school (Academic educational, craft, etc.). Additionally, understand the ethnographic perspective of the refugees in each specific camp.

Author's notes

All the information and data of project EAA/ZHA Classroom, are unpublished and were obtained through the author's communication with the Education Above All foundation during WISE summit November 2019, Doha, Qatar. This dissertation considers one of the first studies, analysing and studying this project.

All the information about the other cases of the study was obtained from the official website of the responsible organizations that built or contribute to the projects.

All the figures that refer to their references as G.H are done by the author of this research.

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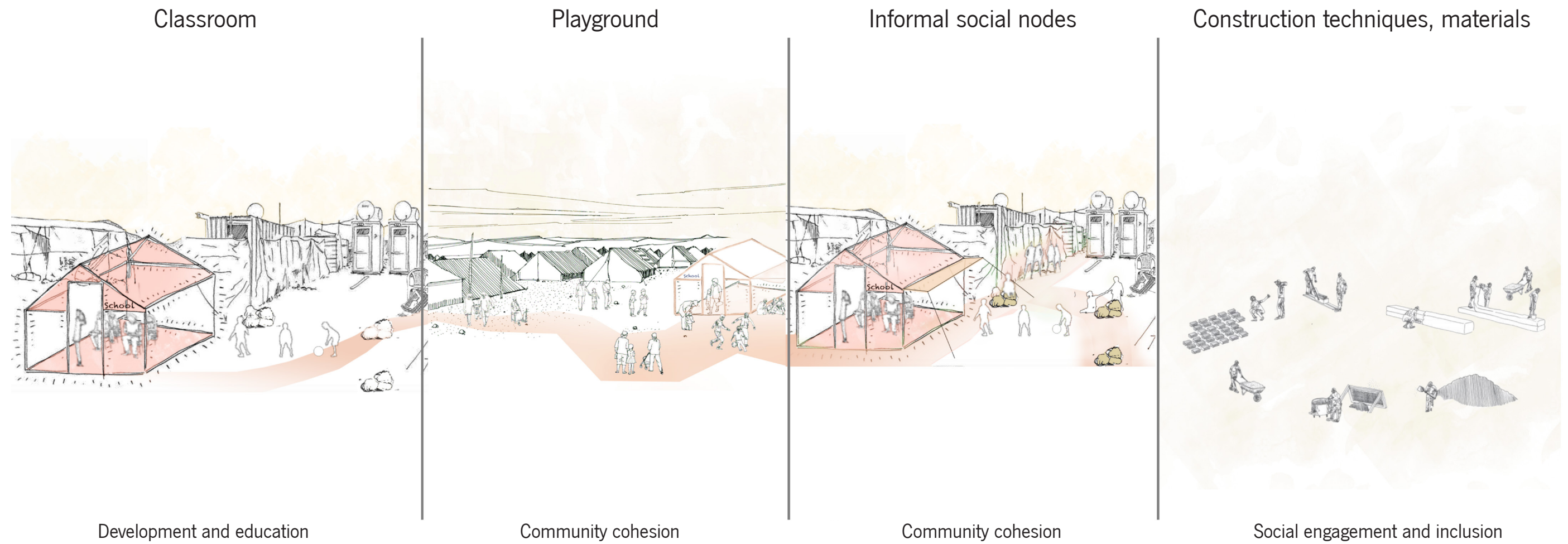
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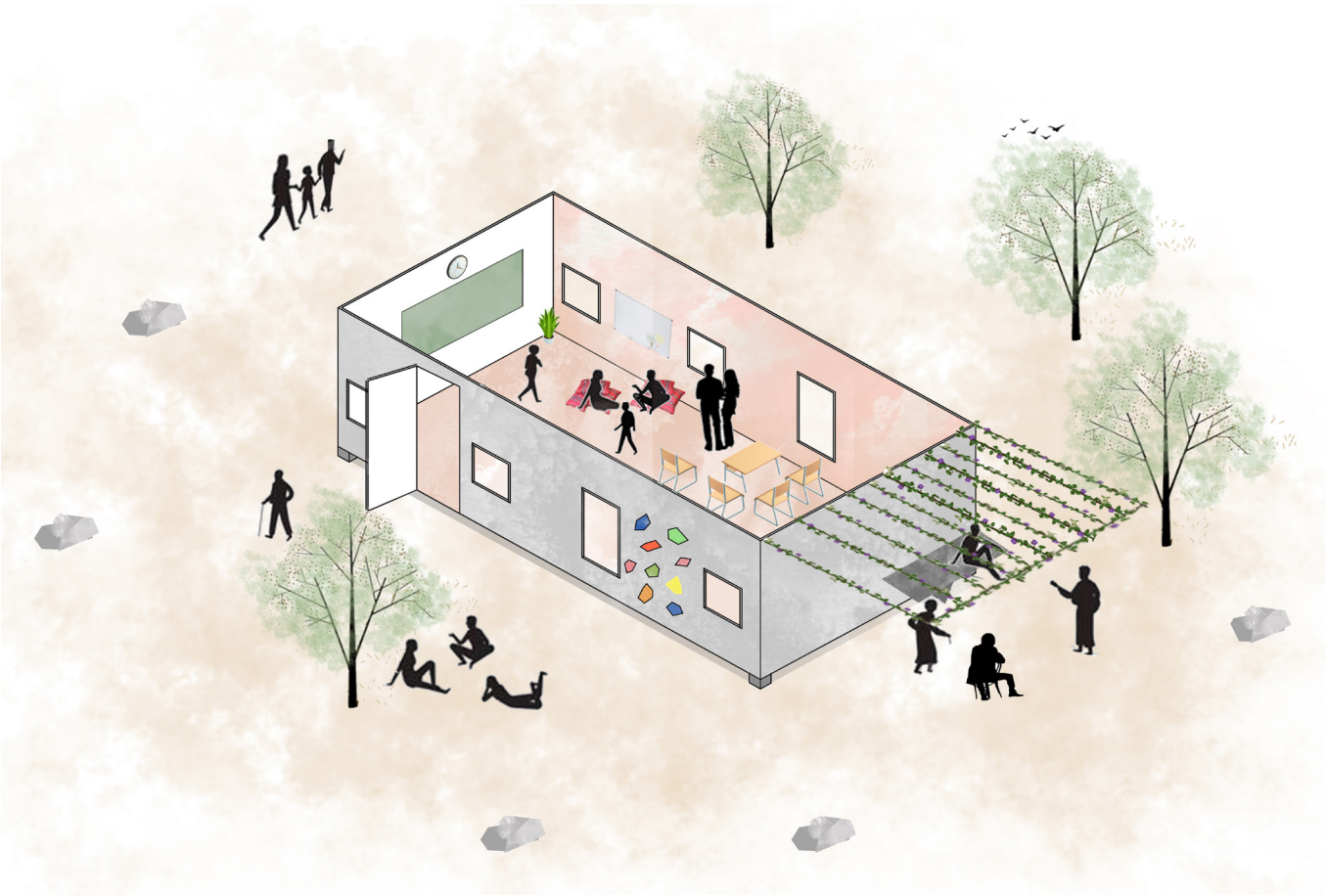
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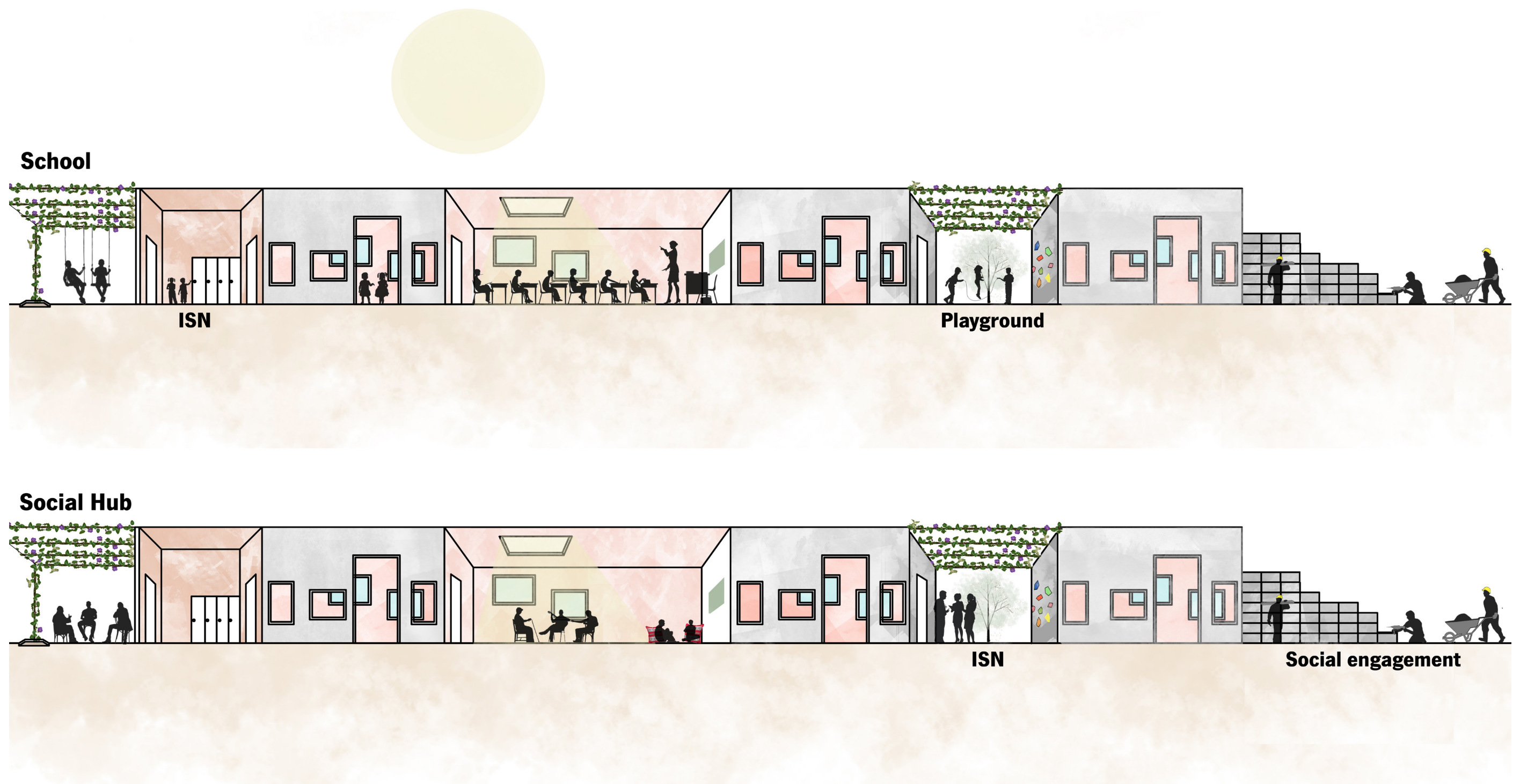
Edu-Social space

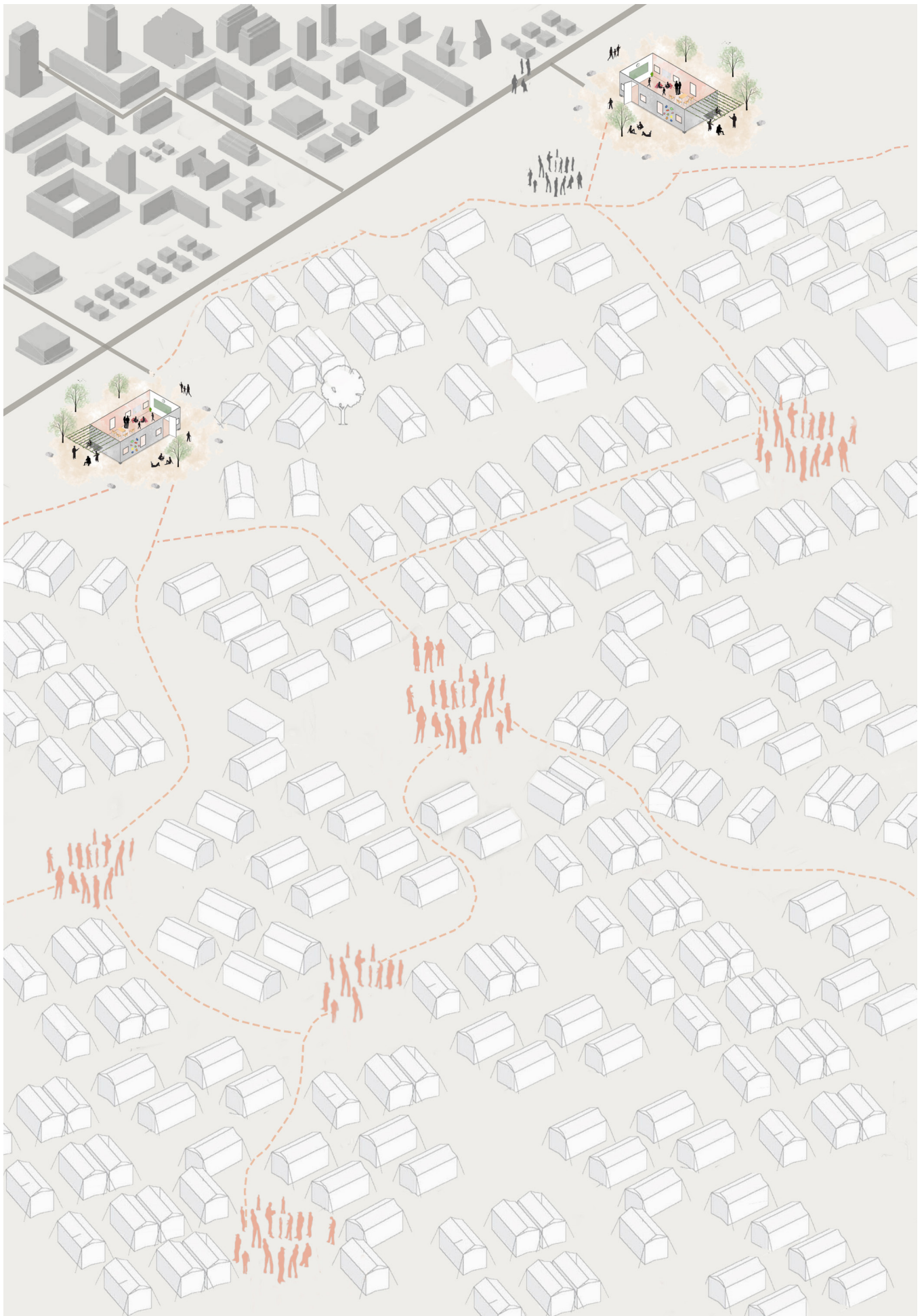


Social space



Educational space





Annex IV-Location of the school to be a social magnetic for communities. Source: G.H.

